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An Investigation of an Evaluation Method and Retraining Procedures for Emotionally Handicapped Children with Cognitive-Motor Deficits. Final Report.

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To assess the effects of specialized retraining of cognitive, perceptual, and motor (CPM) deficits, a battery of tests was prepared and used with 200 behaviorally maladjusted and 200 problem-free children. The composite score indicated that 40% of the maladjusted group manifested major dysfunction whereas none of the problem-free group demonstrated such deficits. Fifty-eight of the maladjusted subjects (from grades 1, 2, and 3) with high dysfunction and academic retardation were selected and assigned to three groups. Thirty received CPM training based on their profiles; 14 were given remedial work based on a survey of their academic skills and IQ results; 14 served as controls. Measures of academic achievement and behavioral adjustment were devised and a test-retest design was used. The results indicated that CPM training was most applicable to children who had developed few, if any, academic skills, appropriate for children at the first grade or below. Programs combining training and remedial instruction were seen to be required for children of second grade or above. Testing and training materials are appended. The interim report is also in the ERIC system. (Author/JD)

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AN INVESTIGATION OF AN EVALUATION METHOD AND RETRAINING PROCEDURES FOR EMOTIONALLY HANDICAPPED CHILDREN WITH COGNITIVE-MOTOR DEFICITS

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U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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June 1968

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Summary

This study was based on the assumption that special educational programs for emotionally disturbed children could be more effective if retraining procedures were provided to those children who were identified as having cognitive, perceptual and motor dysfunction as a major contributing factor to their learning and behavior disorders. Phase I of this project was devoted to the preparation and use of a comprehensive battery of cognitive, perceptual and motor tests comparing 200 behaviorally maladjusted children from grades 1, 2, 3 and 5 with an equal number of "problem free" children. Utilizing a composite dysfunction score derived from summing deficit test scores, we found that 40% of the maladjusted group manifested major cognitive-motor dysfunction in contrast to the problem free group where none of the subjects demonstrated such deficits. With the sample of behaviorally-maladjusted high-dysfunction subjects, we hypothesized that deficits in skills were reversible if training were provided in a systematic and comprehensive fashion and that the subjects so trained would show improvements in behavioral adjustment at school and at home and would show improvement in academic achievement. Utilizing measures of these dimensions in a test-retest design, we compared the effects of training with those of a remedial method and a normal class experience. A sample of 58 subjects from the first three grades from the maladjusted group with high dysfunction and academic retardation was selected and assigned to three treatment groups: Training Group (30 subjects); Remedial Group (14 subjects) and Control Group (14 subjects). The groups were equivalent in age, sex, mean I.Q. and mean cognitive-motor dysfunction score. Classes were formed of seven to eight subjects each for the training (four groups) and remedial (two groups) groups with a certified teacher and teacher aide assigned to each. The groups met daily for a semester in a local church school, transported by taxi, because of the lack of facilities available in the public schools. Intensive cognitive-perceptual-motor training was provided the Training Group subjects based on an individual profile of strengths and weaknesses derived from the prior testing; the Remedial Class subjects were provided small group and individualized programs based on a survey of academic skills and I.Q. results. The personnel for these special classes received special workshop training prior to the beginning of the program and consultation during the entire period.

We demonstrated in this study that, with specialized training offered in small groups, deficit functioning in cognitive, perceptual and motor skills can be improved beyond what could be expected as a result of maturation and normal school experiences. Small class intervention, using remedial methods, was also found to be useful in improving skills. The results indicated that training of this type preceding or replacing regular academic instruction was most applicable to children who had developed few, if any, academic skills, appropriate for children at the first grade or below. Children from second grade and beyond who have developed some academic skills but experienced failure could best benefit from a combined program of CPM training and academic instruction. For some children who have

CPM deficits and severe behavior problems, removal from the home to a treatment milieu incorporating cognitive-motor training and academic remediation was recommended. The findings also suggested conditions under which non-professionals could be effectively utilized as aides and psychological examiners. The value of an itinerant special education teacher program was also discussed. The need for coordination of the special intervention program with effective communications with classroom teachers and parents was stressed.

The findings of minimum gain in behavioral adjustment or academic achievement in any of the groups indicated the need for further study and refinements of the methods employed. It was concluded, however, that the type of children identified and described in this study were the ones in need of and capable of benefiting from specialized programming, either training or training and remediation combined. Future research should include a follow-up of the subjects to determine long-range effects; other studies proposed related to the applicability of this method to experience-deprived children as well as to those emotionally disturbed children who show minimum profit from psychotherapeutic methods.

INTRODUCTION

Although children with deficits in important cognitive-perceptual-motor skills have received increasing attention from mental health practitioners, the relationship between the recognition of deficits in these skills and a therapeutic program has not always been as direct as it might be. Much of the treatment has been confined to chemotherapy or counseling and the school programs have tended to be based on a generalized curriculum approach, rather than being tailored to the specific needs of an individual child. The work reported here represents a systematic approach to the amelioration of cognitive-perceptual-motor deficits based on a conceptual framework, on a diagnostic workup[1] and on a series of materials designed for training along a developmental continuum.

Cognitive-perceptual-motor (CPM) functioning involves those acquired behaviors which allow the child to explore his environment, achieve mastery of himself and his environment and to learn, think and remember. Cognitive, here, includes the intellectual processes concerned with thinking, comprehending, abstracting, and remembering. Perceptual functions include those which contribute additional knowledge of the world through visual, auditory, tactile and kinesthetic senses. Motor functions are those involved in the execution of instrumental acts. Part of the theoretical assumptions underlying this work is that these skills affect each other and that they are interdependent in their contribution to the child's ability to learn.

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[1] A complete description of the evaluation procedure, including the test battery employed, will be found in the forthcoming Wayne State University Press monograph "Testing for CPM Dysfunction"

Nine major functions appear to be most closely related to learning ability and the ability to adapt behaviorally to the environment. These are: tactile-kinesthetic-proprioceptive perception; gross motor coordination; fine motor control; orientation; visual perception; auditory perception; memory; integration and linguistics input and output. Subskills among these functions and their definition will be found in Table 1. Listing of these functions does not imply that below-normal hearing and vision, for example, are not also of importance in learning. As far as vision is concerned, Getman (1962) has pointed out that, although less than 2.4 percent of infants were found to have defective eyes in a study at Chicago University Hospital, that another study of "160,000 children in Texas showed that 20 percent had vision problems at the age of five, and 40 percent had vision problems by the age of eight," (p.19) suggesting at least that the tasks children are called upon to perform in the first eight years of life do have a deleterious effect upon their vision. Similarly Ilg and Ames (1955) point out:

> "One reason for overlooking the child's vision problems has been a lack of understanding by some educators and even by some eye specialists as to what constitutes a visual problem, and how it may differ from an eye problem. Many children have a visual problem, but not an eye problem. That is to say, the interior and exterior parts of their eyes are healthy, they have the ability to see small letters clearly at twenty feet (20/20 vision), and there are no obvious errors in the optical systems of either eye. Therefore the diagnosis is healthy eyes and no eye problem."

Children who manifest deficits in CPM functioning find it difficult to adjust to, adapt to or cope with the demands made of them in the home relative to tasks of daily living, in the school relative to academic and/or behavior adjustment and in the community relative to social interaction. Behavior maladjustment in children who manifest deficits in CPM functioning appears to be related to their inability to cope with stress in the environment. The resulting behavior may be recognized by parents and teachers as short attention span, distractibility, low frustration tolerance, hyperactivity, excessive aggressiveness, disorganization. Academic difficulties which the child will show may be recognized in poor handwriting -- or extremely slow written productions -- reversals of letters, numbers and words both in writing and reading, confusing figure and ground in reading and word recognition, poor number concepts, inability to copy accurately, to follow verbal directions and to express thoughts by verbal means. Difficulties in activities in daily living may include manipulating utensils at meals, zipping zippers, following complex directions, buttoning buttons, climbing stairs, playing games such as jacks, jump rope, riding a bicycle and getting along with peers.

Many of the children who are placed in residential treatment as emotionally disturbed have been found to manifest deficits in CPM functioning which appear to be a significant contributing factor to the development of learning disability and behavior maladjustment and a deterrent to successful rehabilitation of the child in academic, social and psychological areas

Table 1

Cognitive-Perceptual-Motor Functions

Function	Definition
1. Visual perception	Central response to visual stimulus, inferred from verbal or motor response
a. Fine discrimination	Recognition of similarities and differences when the stimuli--presented visually--are increasingly similar, checked along various dimensions including form, size and space
b. Constancy	Holding of a symbolic representation of a form, in both simple and complex stimulus situations
2. Auditory perception	Central response to auditory stimulus inferred from verbal or motor response
a. Fine discrimination	Recognition of similarities and differences between auditorily presented stimuli; not musical sounds, but, rather, language symbols
b. Constancy	Holding of an auditory stimulus and recognition of it among competing stimuli
3. Memory	Recall of visual and auditory stimuli
a. Immediate rote	Recall of digits or unrelated series of items, immediately following presentation
b. Immediate meaningful	Recall of rote details, content and meaning, immediately after presentation
c. Delayed	Recall of rote details, after time lapse
4. Orientation	Awareness of relationships between oneself and events and objects in the environment, along the dimensions of time, space and size
5. Integration	
a. Non-verbal	Ability to combine discrete tangible stimuli into meaningful whole
b. Symbolic	Ability to abstract qualities or meanings from stimuli and to form constructs transferable from situation to situation, using materials that are tangible, abstract or numerical
c. Inferential reasoning	Abstraction of meaning from written or oral material that is suggested by the content but not explicitly stated
6. Linguistics	
a. Input	Ability to understand what is said and to demonstrate formation of habits of language in keeping with construction of English
b. Output	Communication and expression of ideas either through gestures or words
7. Fine motor control	Control of fine movements in simple and complex situations
8. Gross motor coordination	Coordination of large muscles in purposeful manner, including eye-hand coordination, extremities and proprioception
a. Eye-hand	Use of large muscles to perform coordinated tasks
b. Extremities	Smooth functioning of arms & legs
9. Tactile-kinesthetic proprioceptive perception	Central response to stimuli presented only to tactual senses--inferred from motor and verbal responses Utilization of information from large muscles for central balance

of his functioning. Periodic testing of children at Lafayette Clinic (Detroit, Michigan) reveals that from 40% to 75% of the children admitted to the Clinic's inpatient children's service demonstrate deficits in CPM areas, Simson (1966). These deficits appear to affect the child's ability to gain maximum benefit from the intensive psychiatric and other corrective, therapeutic experiences to which he is exposed.

CPM training consists of applying intensive stimulation to areas of functional deficit. The aim is to modify the primary deficit rather than to substitute compensatory modes of adaptation and to raise the stress threshold. The training method consists of presenting the child with activities specifically selected to correct or modify a particular cognitive-perceptual-motor deficit beginning at the level at which he can achieve immediate success. The activities are then graded along a continuum of complexity from that point. The activities used include sensory stimulation, physical exercise, academic readiness materials, play materials, educational toys and specifically designed perceptual-motor training materials. (See Table 2.)

Results of previous empirical study and pilot investigations at Lafayette Clinic indicated that, with such training, children are able to achieve greater satisfaction from their academic endeavors through improved skills; to achieve more comfortable interpersonal relationships and a better feeling about themselves and their environment and to achieve more positive behavioral adjustment.

Subjects for the present study were identified in the first phase of this project conducted in the Roseville, Michigan public schools in order to test the hypothesis that among a population of children described as "emotionally disturbed" by the classroom teachers there would be a significant number who demonstrated cognitive-motor deficits according to the battery assembled at Lafayette Clinic for this purpose. One of the difficulties in the development of instruments adequate for measuring such deficits is that the selection of such instruments depends on the goal of measurement. The psychiatric clinic has necessarily been interested in interpersonal areas, how well a given child relates to others. The opportunity to "average out" scores on various tests -- such as the Wechsler Intelligence Scale for Children -- and arrive at a composite score within an average range has enabled many practitioners to ignore intra-individual differences that frequently pointed to existing deficits in the child. The school has been interested in whether a child has the equipment to learn to read. Again, the composite intelligence test score having been used as the basis for expectancy allowed the school to say that, since the child was at least average in intelligence and by definition had the ability to learn, failure to achieve must have been due to something like an "emotional block." Since many of the children who have deficits in cognitive-motor areas show consequent difficulty with coping and resultant secondary emotional problems, the manifestation of these symptoms in the school and the concentration by the clinic on measurement of interpersonal variables have often obscured the presence of the cognitive-motor deficits.

Early efforts at Lafayette Clinic were devoted to development of measurement instruments, and as far as possible existing tests with

CPM Training Techniques

Function	Training Techniques
1. Tactile-kinesthetic proprioceptive perception	Tactile-kinesthetic proprioceptive sequence which includes cutaneous stimulation, passive and resistive exercise; Identification of body parts, etc.; Identification of objects by touch with sight occluded; Assembling simple puzzles with sight occluded; Sandplay
2. Gross motor coordination a. Eye-hand	Eye exercises; Frostig worksheets; Visual motor worksheets; Follow the dot worksheets; Copying worksheets; Visual motor worksheets; Cutting out objects from magazines, etc.; Supp: Jacks, ringtoss, pegboard, sewing cards
b. Extremities	Bouncing a ball, beachball, two hands, dominant hand. Basketball, two hands, dominant hand. Tennis ball, dominant hand; Catching, Throwing, Batting; Walk on a line; Walk on a beam; Trampoline, Jump-rope; Kicking; Hopping; Skipping
3. Orientation a. Space	Physical exercises: Rolling over Crawling; Walk on a line; Walk on balance board; Identifying body parts using neuromuscular facilitation techniques; Human figure puzzles; Frostig worksheets; Drill in left-right using visual discrimination worksheets. Supp: Magnet board; Hokey pokey; Simon Says
b. Size	Frostig worksheets; Supp:Magnet bd.
c. Time	Holiday & seasons wksheets; Time worksheets; Supp: Play clock; Play calendar; Tell time lotto; records
4. Fine motor control	Tracing beginning with geometric form stencils, geometric patterns, through animal form patterns; Visual motor worksheets; Tracing worksheets; Coloring worksheets
5. Visual perception a.Discrimination	Flash cards (objects, letters, numbers, words); Visual discrimination worksheets; Frostig worksheets. Supp: Magnet board
b. Constancy	Frostig worksheets; Visual discrimination worksheets for similarities covering up stimulus object
6. Auditory Perc. a.Discrimination	Listening exercises; Rhythm band & objects; Sound cylinders; Rhyming worksheets; Initial consonant worksheets. Supp: Games
b. Constancy	Rhyming worksheets; Initial consonant worksheets
7. Linguistics	Direction records; Oral commands;
Input	Written commands
Output	SeeQuees puzzles; Picture scrapbook; Supplying endings; Telling stories and events
8. Memory a. Immediate rote	Visual; Flash cards-objects, letters, numbers, words, phrases Auditory; Naming objects, letters, numbers and words
b. Immediate meaningful	Nursery rhymes; Sentences; Poems; Paragraphs; Stories and events;
c. Delayed	Same as for immediate but with a time lapse
9. Integration a. Non-verbal	Graded puzzles; Frostig worksheets; Visual discrimination worksheets; Visual motor worksheets
b. Symbolic	Useful language worksheets; categorization puzzles; thinking skills worksheets; independent activities worksheets; Supp: Who gets it game; Lotto games; Play store game; Match & check; Play horse game. Numerical: Blocks & objects; Number readiness worksheets; Arithmetic readiness workbooks. Supp: Number readiness games
c. Integration Infer. rsng.	Reading thinking skills worksheets

standardized norms were employed. In other cases, tests were developed by the group and used on children seen at the Clinic. Table 3 lists the discriminating tests from the battery employed for CPM assessment in this phase of the study.

In the first comprehensive study in Roseville, teachers were asked to rate all of the children in their classes in the first, second, third and fifth grades, using the Behavior Checklist (Appendix A). Fifty children at each grade level were selected from among those rated as problem free by their teachers. These children also had never been referred to a visiting teacher, child guidance clinic or psychiatrist and had also never failed a grade in school. Another 50 children were selected at each grade level: these were the 30 boys and 20 girls who displayed the greatest number of behaviors usually thought to be symptomatic of emotional disturbances. These children, as will be seen by the Behavior Checklist, were described as having such symptoms as: unusually susceptible to criticism, cries easily, hits and punches other children, is aggressive in underhanded ways, is destructive, lies or steals -- or up to 43 behaviors.

The specific hypothesis was that these latter children, thought by the school to be emotionally disturbed, should have a greater number of deficits than the "normal" children. It was anticipated that there would be two populations with this behaviorally maladjusted group -- one with cognitive-motor deficits and one without (or those with primary emotional disturbance). Since only children from the first three grades were used for the presently-reported study, the findings on only these grades are reported below.

The results indicated that 24* of the tests in the battery, representing all the dimensions listed above, differentiated significantly between the two groups at the first grade level; 30 tests (including the original 24) differentiated at the second grade and 23 at the third grade level. (See Table 3.) Each subject's performance on the significant tests was compared to a criterion, usually one standard deviation below the mean for his entire age group. A score below this point was considered deficient indicating major dysfunction and the total of these deficit scores, the cognitive-motor dysfunction score. Using a cut-off point of six deficit scores -- or six tests on which the child scored below the cut-off point for the individual test -- we found that none of the normal children show a significant number of cognitive-motor deficits and we have a bimodal distribution in the experimental group, i.e., 60% of the experimental children also do not have cognitive-motor deficits and 40% do have such deficits, even though all the experimental group were described in similar terms by the schools, as "behaviorally maladjusted." Nearly all of the high dysfunction group were also academically retarded in reading or arithmetic or both, not true of all the behaviorally maladjusted children with good cognitive-motor skills (Rubin and Braun, 1968).

Once having demonstrated that a large number of behaviorally maladjusted children have been identified as a sub-group within the disturbed

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* In those cases where a part score and a total score are significant, only the total score was used in the calculation of the cognitive-motor dysfunction score.

Table 3

Tests that Discriminate between Maladjusted and Problem-Free Groups

Test # or Name	Function	Grade			
		1	2	3	5
Frostig I	Fine motor control - simple		.01	.01	.05
Frostig II	Visual perc. - form discrimination		.01		
Frostig III	Visual perc. - constancy	.01	.01	.05	.01
Frostig IV	Visual perc. - orientation in space		.01	.05	.01
Frostig V	Visual perc. - orientation in space	.01	.05	.01	
Bender-Gestalt	Fine motor control - complex	.01	.01	.01	.01
Raven Matrices	Symbolic integ.-with concrete materials	.01	.01	.05	.05
ITPA-Vis.Decod.	Symbolic integration - nonverbal	.05			
ITPA-Mot.Encod.	Linguistic input		.01		
I-A	Visual perception - form	.01	.05		
I-B	Visual perception - form, simple		.01	.01	
I-D	Visual perception - form, complex	.05	.05		
I-E	Visual perception - constancy	.01	.01	.01	.01
I-F	Visual perception - constancy		.01	.01	.01
II-A	Aud.perc.-discrim. of similarities & diffs.	.05	.05	.05	.05
II-B	Auditory perception - constancy	.01	.01	.01	.01
III-A	Visual memory - form		.01		
III-B	Memory - immediate meaningful		.05		.01
III-C	Memory - immediate meaningful	.05			
III-E	Memory - delayed meaningful		.01		
IV-A	Orientation - time	.01	.01	.01	.01
IV-B	Orientation - size	.01	.01	.01	
IV-C	Orientation - midline		.01		
IV-D	Orientation - space	.01	.01		.01
IV-F	Orientation - space	.05			
V-A	Integration - nonverbal	.01		.01	
V-B	Symbolic integration		.01	.05	
V-C	Symbolic integration - abstract	.01	.01		
V-D	Symbolic integration - abstract	.01	.01	.01	.01
V-E	Symbolic integration - numerical	.01	.01	.01	
VI-A	Fine motor control	.01	.01	.01	.01
VI-B	Eye-hand coordination	.01	.01	.01	.05
VII	Gross motor coordination - jumping	.01	.05		.05
VII	Identification - gross motor coord.	.01		.01	
VIII-A	Linguistic input - total score	.01		.01	
IX-D	Tactile kinesthetic - face-hand			.05	
IX-E	Tactile kinesthetic - moving stimulus	.01		.01	.01
IX-F	Tactile kinesthetic - motor memory (left)	.05	.05		
IX-F	Tactile kinesthetic - motor memory (right)	.01			
IX-F	Tactile kinesthetic - motor memory (total)	.01			

population on the basis of cognitive-motor deficits, the next step was to design a study that would test the hypothesis that these deficits are susceptible to training and that improvement in the areas of deficit would generalize to social behavior and academic functioning. Other researchers have attempted to correct academic disability by training areas of skill deficit, although none has attempted to examine children for as many areas of deficit nor to tailor a training program specifically for an individual child. Silver, Hagin and Hersh (1967) report the application of training in perceptual areas to two groups of boys showing at least one year's retardation in reading, but the results are not yet available. They report encouraging initial results in that they find that "where perceptual defects are first trained out, reading instruction as intermodal and verbal levels will have a better chance of success." (p. 751) Unfortunately, Marianne Frostig (1966) (who reports that training programs in sensory-motor development, language, perception and higher thought processes, as well as in visual perception, are being used or developed in her Center) is also unable to give data on the children receiving this training although she says that "It is our hypothesis that intervening training will have helped to correct developmental imbalances, so that the intratest patterns of these children will be more even." (p. 5) She also anticipates positive effects of training on emotional and social adjustment and school achievement. Bannatyne (1967) describes a number of possible techniques in working with remedial methods to match specific deficits, but he does not give sufficient results to relate his findings to this study.

It appears, then, that the present study is the first systematic investigation of the effects of CPM training on the behavioral adjustment and academic functioning of a group of boys and girls from public schools. The hypotheses to be tested in this study were:

1. Children receiving systematic training will show significant improvement in areas of cognitive-perceptual-motor functioning;

2. Children receiving systematic training will show more improvement in CPM skills than similar children in a traditional special class or in a regular classroom;

3. Children with cognitive-motor deficits who receive systematic training will show significant behavioral improvement in the regular classroom;

4. Children with cognitive-motor deficits who receive systematic training will show more behavioral improvement than will children who are placed simply in a special classroom employing traditional remedial methods;

5. Children receiving systematic training will show significant behavioral improvement within their home environment;

6. Children receiving systematic training will show more behavioral improvement at home than children in a traditional special classroom;

7. Children receiving systematic training will show significant academic growth, above that to be anticipated through normal school experience;

8. Children receiving systematic training will show more academic growth than will children in a traditional remedial classroom.

Method

Selection of Subjects

This study dealt with the evaluation of stimulation training methods with a group of 58 children who were identified as evidencing behavior maladjustment, CPM dysfunction and learning disorder. The subjects were selected from the first, second and third grade Phase I experimental sample who demonstrated behavioral maladjustment and achieved five or more deficit scores on the Lafayette Clinic CPM Battery. These children were grouped to achieve equivalence in age, sex, mean I.Q. and mean CPM dysfunction scores. (See Table 4.) By these criteria, 30 children were placed in a CPM training group (Group 1), 14 were placed in a remedial group (Group 2), and 14 in a control group (Group 3). The children in Group 1 received Cognitive-Perceptual-Motor training methodology, Group 2 children received remedial education methods while Group 3 children remained in their regular classrooms receiving no specialized help.

The sample ranged in age from seven years three months to 11 years one month with a mean age for the group of nine years with 42 boys and 16 girls. The I.Q. scores for all subjects ranged from 82 to 125 with a mean I.Q. of 94.6. The distribution of subjects by grade showed 23 children in Grade 1, 19 in second grade and 16 in Grade 3. For the distribution by grades see Table 5. This sample had been described on the Behavior Checklist by such terms as "sensitive to criticism, overconforming, aggressive, attention-seeking, dependent, poorly coordinated, lacking a sense of responsibility, isolated from others, preoccupied, frequently tardy and easily fatigued."

The optometrists' reports indicated that 20 of the 30 children in Group 1 and eight of the 14 children in Group 2 were in need of corrective lenses. (By the termination of the project, lenses had been purchased for 21 of the children from these groups.)

Classroom Design and Procedure

The children in the training group (Group 1) and the remedial group (Group 2) were seen in small classes of seven or eight children with a certified teacher and a teacher aide assigned to each group. Four groups were assigned to CPM training and two groups to the remedial class. Half of the children were seen in the morning, half in the afternoon. The subjects came from different schools in the district and were transported to the classrooms by taxi. The other half of their day was spent in their regular classrooms. The training program and the remedial group classes

Table 4

Study Sample

	Total	M	F	Mean Age (months)	Mean WISC IQ Score Verb.	Perf.	Full Scale	Mean Dysfunction Score
Group I	30	22	8	106.8	95.1	97.8	96.0	8.4
Group II	14	10	4	106.5	93.1	98.9	95.4	7.9
Group III	14	10	4	111.4	91.1	95.6	92.6	7.6

Table 5

Distribution of Subjects by Grade and Group[1]

Grade	Number of Subjects			
	Group I	Group II	Group III	Totals
1	9	6	8	23
2	12	6	1	19
3	9	2	5	16
TOTALS	30	14	14	58

---

[1] Differences in grade level representation are taken into account in the statistical analysis (see Tables 12 and 17).

were held in a church building in Roseville, Michigan for a period of three and one-half months. The physical facilities for the project consisted of three classrooms, the hallway and a storage area. The classes met in half-day sessions providing two hours of stimulation training or remedial education for each child.

Group 3, the children in the control group, attended regular self-contained classes in the Roseville system five days per week, five hours per day with one certified teacher in each classroom. Class size for the Roseville Schools ranges from 26 to 33 children per classroom, the modal class size being 30. Generally, the children are assigned to classes randomly within grade levels. In some instances consideration is given to sex, ability and personality factors in classroom distribution.

Training Group Management

The children in the training groups were seen by two teachers and teacher aides and moved between two classrooms at one-hour intervals. The functional areas that were concentrated on in the perceptual and motor development room included: tactile-kinesthetic perception; gross motor coordination; fine motor control; visual perception; orientation in space and size; and non-verbal integration. The functional areas stimulated in cognitive and perceptual development room included: auditory perception; memory; orientation in time; linguistics output and input; symbolic integration and inferential reasoning.

Figure 1 graphically illustrates the management of the groups.

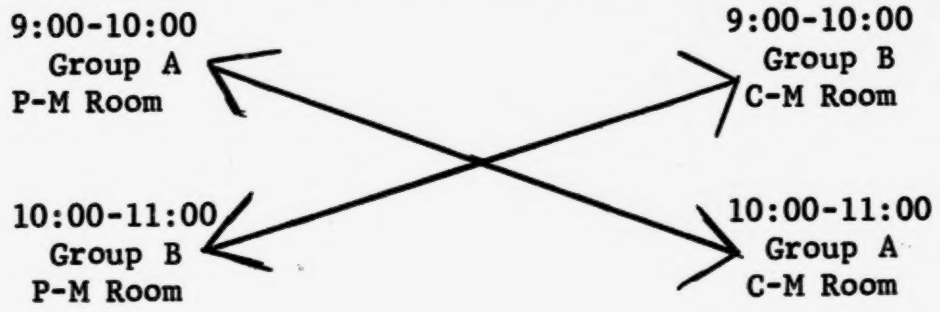

Figure 1. Group Movement.

Group A would begin in the perceptual and motor development room for the first period then move to the cognitive-perceptual development room while Group B would follow the reverse procedure. This allowed for stimulation training for two groups of fifteen children each on a daily basis. This division of responsibility for training in these specific areas grew out of the preliminary work done by the Lafayette Clinic Research Team in which an effort was made to capitalize upon the skills, abilities and knowledge which the special education teacher, physical education teacher and occupational therapist could naturally apply to the training situation.

For a detailed sample of the daily breakdown of exercises and activities, see Appendix B. In the sub-groups within the training groups, an attempt was made to achieve homogeneity regarding areas of dysfunction being trained.

Remedial Group Management

In the remedial program, the children remained in the same room with the same teacher and teacher aide for the two hours with a fifteen minute recess provided as a break in activity.

Three instructional (Reading) groups were held for the A.M. and P.M. subjects. The table below indicates the number of groups within the A.M. Class.

Table 6

Groups Established According to Reading Grade Levels

Instructional Reading Level

	A.M.	P.M.
1st Grade	3	4
Readiness - Pre-Primer	3	2
2nd Grade	1	1

The instructional reading levels reflected in the A.M. group, for all practical purposes, were identical to the reading levels present in the P.M. group. There was, however, a slight variation in the number of children in one group. A detailed description of a typical morning's schedule is available in Appendix B.

Control Group Management

The academic curriculum used for the children in the control group was that which was used on a system-wide basis. Generally, basic academic subjects are taught in the morning with non-academics in the afternoon. The distribution of subjects taught daily is illustrated in Appendix B.

Attention to individual differences is provided for by the grouping of children in the various subject areas within each classroom. For example, there are from two to four reading groups in each class and children are assigned to a group according to his level of reading ability. In some instances special arrangements are made for the more academically deviant children. For example, a child who is performing at an extremely high or low level in a particular subject may receive individual instruction or be sent to a different classroom and/or grade for instruction in that area.

Description of Program Activities

Training Group Activities

A dysfunction profile was drawn for each child placed in the training group based on his performance on the CPM Battery. (See Appendix E, Item 2) This profile formed the basis of an individualized stimulation training program for each child so that emphasis could be placed on improving deficit areas.

The training was based on concepts involving repetition and reinforcement leading to mastery of the self and the environment. It included both practice with materials and objects and behavior control. Success feedback was an important component which was capitalized upon in practice situations as the child moved toward mastery. Activities and expectations for behavior control were geared to the level at which the child could achieve immediate success. Gradually, the activities and expectations were increased to coincide with the child's rate of progress. Time and repetition were required at each step along the way to insure that the appropriate learning took place.

For training in the tactile-kinesthetic area, activities were used to develop sensitivity to feel, knowledge of the body scheme, balance and laterality. These included tactile stimulation to the arms and legs, resistive exercise and identification of objects and textures with sight occluded.

For gross motor coordination of extremities, activities were used to facilitate movement through space using large muscles such as jumping, kicking, throwing, and skipping games with weights for additional stimulation. For eye-hand coordination, both games and pencil and paper techniques were used to facilitate smooth eye movements, practice in working from left to right, and smooth coordination of eye motions and motor movements. Eye exercises, tracing and copying worksheets, jacks, paper crafts, ring toss, pegboard games and sewing cards are examples of activities that were used for training in this area.

For orientation in space; many of the same activities that were used in training the tactile-kinesthetic function were used to develop a concept of similarities and differences with reference to the child's own position in space.

For orientation in size, the child's concept of larger, smaller; shorter, taller; and progressive sizes was developed through the use of worksheets from the Frostig series and the use of a magnetic board.

In the training of fine motor control, our aim was to develop muscle control through the use of stencils, patterns and worksheets. Geometric form stencils were used to provide the child with external support. Animal stencils and various other patterns were used.

For visual perception training, our aim was to help the child learn first to identify objects correctly, then to discriminate similarities and differences, to match objects that were the same and to develop the ability to recall visual images. Flash cards, picture books, scrap books, worksheets and flannelgraph or magnetic boards were used.

Training in auditory perception also included both discrimination training and constancy. In auditory discrimination training, the child was helped to recognize similarities and differences between stimuli which were presented orally. Discrimination training began with teaching the child to attend to sounds. Records were used which contain common sounds in the environment. The child was helped to develop the ability to distinguish between gross sounds through the use of sound cylinders, cowbells and rhythm band instruments. Finer discrimination was stimulated through the use of worksheets containing visual representations of the auditory stimuli. The child's tasks were to identify the sounds and to discriminate among objects which rhyme as well as those which contained the same initial, middle and final sounds. In constancy training the child was helped to learn to hold the memory of the auditory stimulus and to recognize it among competing stimuli. The same sequence of materials was used to train auditory constancy as for discrimination. However, the stimulus was removed before the child completed the task.

The development of memory included both immediate and delayed memory of rote items and meaningful material. The activities used were graded in complexity by the number of items or length of narrative to be recalled, as well as the amount of viewing time allotted. Presentation of material was both visual and auditory. Objects were used initially. As the child became proficient in recalling a certain number of objects, the number was increased by one each time. Worksheets with words, sentences and paragraphs were used in the same manner. Gradually, the exposure time for each worksheet was reduced to a minimum. The activities used for delayed memory were identical to those for immediate. However, a short time lapse between exposure and recall was provided and gradually increased as skill was developed.

Time orientation training was directed toward increasing the child's awareness of time relative to himself and later involved specific instruction in time concepts. The sequence began with the seasons, holidays, months of the year and days of the week. Concepts such as before, after, now and later were incorporated into the activities.

In training non-verbal integration, the child was helped to learn to organize multiple stimuli by paying close attention to form, color and other relevant cues. Graded puzzles and worksheets were used to train this area of function. This sequence of activities began with simple single inset jig-saw puzzles, in which each piece of the puzzle formed a whole that fit in only one place in the background. The next activities were three to four piece puzzles and the magnet board. On the magnet board the children were encouraged to construct objects using a combination of geometric forms. Worksheets and more complex picture puzzles were also used.

Symbolic integration training was aimed at developing the child's ability to abstract, conceptualize and categorize. Worksheets were used beginning with people and their activities in the child's immediate environment, extending to those in the community such as the teacher, the postman and the milkman. At this level, the child was helped to learn simple classifications and concepts from discussion with the teacher stimulated by worksheets. Categorization of objects related to abstract concepts was the next step with classifications and analogies becoming increasingly complex throughout the series. Inferential reasoning, which is another aspect of integration, is aimed at developing the child's ability to abstract meaning from implied material. Worksheets, supplemented by games, were used which contained sentences and short stories to which the child was required to supply the missing word or words implied by the content.

Linguistics training included both input training, developing the comprehension of language symbols and output training, developing verbal expression. Input training began with simple direction activities. Records were used, which instructed the child to walk, run, march or skip in time to music. Nursery rhymes, songs and games were used to provide direction activities at a low level. Verbal commands were used and were graded in complexity by the number given each time. Linguistics output training began with naming objects in the environment and progressed to the organization of expression. The child was helped to learn to tell a story in sequence by describing sequencing puzzle pieces and placing them in proper order. Scrapbook pictures were used as the stimulus to help the child learn to tell stories that were required to have a beginning, a middle and an ending. He was helped to learn to use appropriate sentence construction and encouraged to use imagination and detail in his productions. See-quees puzzles and scrapbooks were used for training this area. At the next level, visual aids were eliminated. The individual working with the child would tell beginnings of stories, the child's task then being to provide the endings. Finally, the child would tell complete stories and events without aids, gradually increasing in complexity, detail and proper sequence. Examples of materials from four of the training sequences are available in Appendix C.

Consistent with a developmental point of view, we also provided means for helping the child develop independent behavior controls through the use of appropriate discipline. Structure and routine in the environment were used to reduce some of the stress associated with being required to function at a level too complex for his coping ability. Gearing activities to the level of the child's ability was used in this same way. Emphasis was then placed on helping the child develop more adequate coping ability in the behavioral areas such that he could eventually function in a less structured environment. A progressive program of behavior patterning was implemented with the environment necessarily limiting certain kinds of behavior initially but at the same time having as our ultimate goal helping the child learn to control his own behavior. Such techniques and methods as planned ignoring, proximity control, giving extra attention and affection, extra help over difficult situations, restructuring an activity or situation, direct appeal, clarification and anticipation around difficult areas, temporary removal from excessive stimulation, and redefinition of limits and requirements were used. Expectations were graded and reinforced by opportunity for independent practice with support.

Remedial Group Activities

Lesson plans were developed for the children placed in the remedial group based on their performance on achievement tests so that remediation could be provided in academic areas in which they were deficient utilizing their areas of competence.

The basal reader provided the basis for practice in utilizing reading skills. Emphasis was also placed upon improvised worksheets and methods and techniques gathered from other sources. The Bank Street Basal Reading Series provided practice in daily reading skills development. The following materials from the Continental Press Inc. were also utilized: We Get Ready to Read; We Learn to Read; Good English, Level 2 Vowels, and Rhyming Exercises. The Science Research Associates (SRA) Reading Laboratory, Level 1C, provided supplementary reading material. Innovations and adaptations of techniques by staff members were used for children who did not respond to the more traditional methods. The motivational aspect of the reading program included the following activities:

Publication of weekly newspaper by pupils

Telling stories from pictures

Play store

Show and Tell

Organization of Sound Club

Alphabet Cereal

Picture Dictionaries developed by pupils

Flash Cards

Experience Stories

Poetry

Music

Acting out story or feeling of a particular character
in a story

Classroom activities, pamphlets published by the American Association for Health, Physical Education and Recreation, and Language Experiences for Pre-School Children, Curriculum Guide, published by the Detroit Public Schools, were also used for instructional materials and motivational activities. Sample materials are presented in Appendix C.

Fifteen to twenty minutes were provided daily for some type of group participation in which supplementary reading games were utilized. Printed materials and books were kept to a minimum during these periods, except for children who desired to read independently. During this time children were also encouraged to discuss, or share experiences and games brought from home that everyone could share.

Programming around a child's particular reading problem and his or her expressed interest in related areas was used as a primary means of behavior control. Temporary removal from group stimulation or contagion, however, was used as a last resort. A teacher aide was available in the area to which a child was sent to calm down or complete his work. This situation was designed to assist the child in overcoming the academic difficulty he might be experiencing or to help him in exerting some inner controls. In these instances, completing the previously assigned task was deemphasized, and a substitute activity provided. The latter activity was more often less demanding but related to some development in reading skills.

Control Group Activities

The learning materials used in the regular classroom consisted of basic text books such as the Basal Readers by Ginn & Co. and the Addison-Wesley Modern Math Series for arithmetic. In addition, supplementary materials such as educational games and library books were selected for use by the individual teachers.

Preparation of Personnel

The teaching staff for the training classes consisted of: one special education teacher, one physical education teacher and two teacher aides. The teaching staff for the remedial room consisted of an elementary classroom teacher and a teacher aide. One regular elementary classroom teacher served as a substitute teacher for either program and as a monitor as needed. The function of the monitor was that of a person to whom the child could go when he lost control or was overstimulated. Relating with the monitor was deemphasized. The child was given work to do that could be done independently, requiring minimal interaction with the monitor.

Training Group Staff

A four-week workshop was held for training group staff in which they received an orientation to CPM dysfunction, methods of stimulation training, principles of program planning, methods of managing problem behavior and practice sessions with severely emotionally disturbed children in which these principles and methods could be utilized.

This workshop was conducted by project staff. Outlines of the workshop content and schedules are available in Appendix D.

Remedial Group Staff

A five-week workshop was held for the remedial group staff in which they observed in a public school class of emotionally disturbed children and assisted the classroom teachers in carrying out the instructional program for three weeks. The latter two weeks of the workshop consisted of the presentation of didactic material concerning such topics as: The Nature of Reading Problems; Teaching of Reading, Methods and Techniques; Grouping for Instruction; Curriculum Planning; and Behavior Management.

This workshop was conducted by the Special Education Consultant. A detailed outline of the workshop content and schedules are available in Appendix D.

Supervision

Continuous supervision and consultation regarding program content, classroom management and behavior management was provided to all teaching staff on a twice weekly basis through formal and informal discussion of cases. Supervisor-consultants from the project staff were available to the training group personnel while the Special Education Consultant was available to the Remedial Group Staff.

Periodic timed observation samples were taken in each classroom by the supervisor-consultants and scheduled review of progress sessions were also held. As a part of the final evaluation, a summary of the child's total performance as seen by the teachers was discussed and recommendations were made regarding the type of continued help indicated. Copies of the record keeping forms used in the project are available in Appendix E.

Evaluation of Training

The effectiveness of the training method was evaluated by a test-retest method. Scales were used to assess changes in CPM skills, social adjustment at school, home behavior and academic achievement.

(a) The Lafayette Clinic CPM test battery, plus the WISC,Frostig, Bender, Raven and three tests from the ITPA (visual decoding, motor encoding, and vocal encoding) was administered to all subjects during the academic year 1965-66. The description of these tests, including normative data and the results of their use in differentiating between 200 maladjusted and 200 problem-free school children, appear in the Final Report for Phase I of this project. The second testing was accomplished during the last four weeks of the training phase (May 15 - June 15) using a selected battery of 29 of the original tests. The WISC, Bender, Frostig, Raven and visual decoding and motor encoding (ITPA) were also repeated. Those test items that differentiated between behaviorally maladjusted and problem-free children at any grade level were retained.

(b) The Teachers Rating Scale consisting of 55 items that delineate a variety of behaviors observable to the classroom teacher was completed on each child. All the scales are rated for the child's behavior when directly observed by the teacher (teacher's sphere); some items are also rated when the child is observed in independent activity or outside the classroom. A total of 79 scores is derived from this scale (Rubin, Simson, Betwee, 1966). The classroom teacher rated each subject in Phase II within a few weeks prior to the beginning of the training phase and again during the last three to four weeks. A change score for each child was derived from the algebraic sum of the differences between the two observations (see Appendix F).

(c) The child's behavioral adjustment at home was rated by an interviewer along 11 dimensions based on an hour interview with the mother in her home covering 18 specific areas (see Appendix F). The interviews were conducted by the same person just prior to the beginning of and during the last few weeks of the training phase. A comparison of the two scores for each item was made and the algebraic sum of these changes resulted in the subject's change score.

(d) The Primary and Intermediate forms of the Metropolitan Achievement Test were used to measure changes in academic achievement. First graders were tested by project examiners in the spring of 1966, as part of the original assessment (Phase I). Achievement test scores from the child's record were used for second and third grade subjects. The appropriate form of the MAT was administered by project personnel at the close of the training phase. For this analysis the change from Test I to Test II was calculated for each subtest for each subject, using as scores the discrepancy between grade achievement and chronological age grade placement.

Results and Findings

Four measures were used to determine the effectiveness of stimulation training on a group of young children identified as behaviorally maladjusted and subsequently determined to have high cognitive-motor dysfunction and learning disability. As previously stated, the three groups used will subsequently be referred to as Group 1 - the training group, Group 2 - the remedial group, and Group 3 - the control group. These four measures were utilized to measure changes in cognitive-perceptual-motor skills, social adjustment in the classroom, behavioral adjustment at home, and academic achievement. In all instances, tests were administered before and after the introduction of the intervention method. Initially, analysis of covariance across the three groups was used to test for differences in improvement in skills (40 variables), behavior at school (79 variables) and at home (11 variables) and academic achievement (5 variables). Subsequently, individual change scores were calculated for each subject's total score on each of the measures. Evaluation of change was based on a chi square analysis of the number and percentage of subjects improved and unimproved for each measure taken as a whole. In this section the results will be discussed for each measure separately.

Effects of Training on Cognitive-Motor Skills

Evaluation of the effects of training by analysis of covariance of the 40 scores derived from the cognitive-motor battery plus additional standard tests revealed five significant differences between Groups 1, 2 and 3 (see Table 7). Although this number of significant scores is fewer than would be expected by chance alone, all differences were in the expected direction and showed that Group 1 subjects improved more than Group 2 and 3 subjects. The t-test differences between Groups 1 and 3 were all significant beyond the .01 level; differences on the Frostig III (Form Constancy), Test V-D (Verbal Integration - Inferential Reasoning) and Test VII-Identification (gross motor coordination) indicated a significant superiority of Group 1 over Group 2 subjects. In addition, we evaluated the direction of changes to determine what trends were evident from our data. Table 8 lists the tests that favored each of the groups showing the five items that were significant. Fifteen tests, representative of nine different cognitive-perceptual-motor functions, indicated a greater mean improvement favoring the training over both the remedial and control groups. There were 11 tests, representing seven different functions, that favored the remedial group over the other two; and five tests, representing five functional areas in which the control group was more improved. The results indicated clearly that there was more improvement for both the training and remedial groups than for the control group. There did not appear to be any apparent differences between these two groups on the type of function showing improvement (see Table 9). For both Groups 1 and 2 most of the tests measuring information processing did show improvement whereas only two such tests were reflected for Group 3.

Table 7

Skill Variables Discriminating Among Treatment Groups

Test	Mean Scores Treatment Group 1 Pre	Post	2 Pre	Post	3 Pre	Post	F
Frostig III (Vis. Perc.)	6.3	8.6	7.4	7.7	7.0	7.6	5.86**
Test V-D (Verb. Integ.)	13.5	17.3	13.6	15.8	13.1	15.7	5.48**
Test VI-A (Fine Motor)	7.9	8.7	8.4	8.4	8.2	7.4	7.46**
Test VI-B (Fine Motor)	2.5	3.3	2.3	2.9	2.6	2.6	3.83*
Test VII (Identification)	7.2	8.6	7.9	7.8	6.5	7.6	4.30**

* < .05 ** < .01

Table 8

Tests from Cognitive-Motor Battery Showing Improvement

Tests Favoring Gp. 1 > 2 and 3	Tests Favoring Gp. 2 > 1 and 3	Tests Favoring Gp. 3 > 1 and 2
Frostig I	Frostig IV	Frostig II
**Frostig III	I-E	II-B
ITPA-Vis. Decod.	I-F	V-B
I-B	II-A	IX-F-right
I-D	III-B	Raven
III-A	IV-B	
IV-F	IV-C	
**V-D	V-C	
V-E	VIII-A	
**VI-A	IX-D	
*VI-B	Bender	
VII-Ident.		
IX-E		
IX-F-left		
IX-F-total		
15	11	5

** Sig. at .01 level * Sig. at .05 level

Table 9

Functions Measured in Tests

	Tests Favoring Gp. 1 > 2 & 3	Tests Favoring Gp. 2 > 1 & 3	Tests Favoring Gp. 3 > 1 & 2
Information Processing			
Visual Perception	5	3	1
Auditory Perception	0	1	1
Tactual & Kines. Perc.	3	1	
Linguistics Input	0	1	
Cognitive Integration			
Verbal & Non-Verbal Integ. & Spatial Concepts	3	3	2
Memory	1	1	
Motor Output			
Fine & Gross Mot. Coord.	3	1	1
	15	11	5

The findings thus far indicated clearly that both the training and remedial subjects showed more improvement than the control subjects who received no special treatment. To test this further we examined the total number of test items on which each subject showed improvement. The scores range from +29 to +13. The distribution for the three groups is presented in Table 10. Using the upper and lower quartiles to indicate most and least improvement we found the trends to be the same as previously reported (see Table 11). In this analysis Groups 1, 2 and 3 showed an equal percentage of subjects in the "most improved group," however, Groups 2 and 3 showed more subjects "least improved." The control group had the highest percentage of least improved subjects. These figures represent trends for none of the comparisons by chi square are significant.

A further analysis of the findings on changes in cognitive-perceptual-motor skills following the training program reveals a positive relationship between improvement and grade of subjects. Table 12 lists the subjects who improved most and least according to grade as well as according to group. Thirty-nine percent of grade 1 subjects are in the most improved category as compared to 32% and 12.5% of grades 2 and 3, respectively. In the previous analysis, the percent of subjects from Groups 1 and 2 who were improved according to number of items improved was essentially the same. This finding is further explained by this relationship with grade probably reflecting the age of the subjects. The younger subjects do appear to benefit more from either training or remedial intervention as compared to no intervention at all. Probably of greatest value is the finding that 56% of grade 1, Group 1, subjects are in the most improved category, by far the best group. None of these relationships demonstrated significance according to a chi square test.

Although these data failed to confirm our hypothesis that stimulation training will result in more improvement in cognitive-motor skills than either remedial intervention or no intervention at all, the results do indicate that specialized intervention with small groups directed towards improvement of skills is more effective than regular classroom experience. Furthermore, the effects of small group experience in this study appear to favor the development of information processing skills and these effects are greatest with grade 1 subjects, our youngest group.

Effects of Training on Classroom Adjustment

In order to assess the effects of training on classroom adjustment the scores from the Teacher Rating Scales prepared by the classroom teachers administered before and after the training were compared. The analysis of covariance across the three groups for 79 variables revealed three significant items: Effects of Praise by Teacher, Interest in School Work, both favoring Group 2 over the other two groups and Nervous Habits, where Group 3 showed the most improvement. (See Table 13.) The algebraic sum of the differences for 79 items was used to determine each subject's change score. The total scores ranged from +68 to -158. Subjects with a score of +1 or greater were considered improved; with 0 or less unimproved. The distribution of these scores for each of the three groups is presented in Table 14.

Table 10

Distribution of Subjects' Scores on Total Number of Improved Test Items

No. of Items Improved	Number of Subjects Group 1	Group 2	Group 3
29	1	0	1
28	0	0	0
27	2	0	0
26	2	2	0
25	2	1	0
24	1	0	1
23	1	1	2
22	1	3	1
21	8	2	2
20	5	0	1
19	3	2	0
18	2	1	2
17	1	2	3
16	0	0	1
15	0	0	0
14	0	0	0
13	1	0	0
TOTALS	30	14	14

Table 11

Number and Percent of Subjects Showing Improvement in C-P-M Skills

	Group 1	Group 2	Group 3
Most Improved 23 items or more	9 (30%)	4 (28%)	4 (28%)
Least Improved 19 items or less	7 (23%)	5 (36%)	6 (45%)

$X^2 = .68$ n.s.

Table 12

Number and Percent of Subjects Improved in
C-P-M Skills by Grade and Group

	Number of Subjects											
	Grade 1				Grade 2				Grade 3			
Group	1	2	3	Total	1	2	3	Total	1	2	3	Total
N	9	6	8	23	12	6	1	19	9	2	5	16
Most Imp. 23 or >	5	2	2	9 (39)	3	2	1	6 (32)	1	0	1	2 (12.5)
Least Imp. 19 or <	1	2	4	7 (30)	4	2	0	6 (32)	2	1	2	5 (31)

$X^2 = 2.96$ n.s.

Table 13

Teachers Rating Scale Variables
Discriminating Among Treatment Groups

	Mean Scores Treatment Group						
	1		2		3		
	Pre	Post	Pre	Post	Pre	Post	F
Effect of Praise by Teacher	3.7	4.3'	3.1	2.6	3.1	2.9	3.36*
Interest in School Work	5.8	6.8	6.0	5.0	5.0	5.2	4.20*
Nervous Habits	5.4	5.4	4.2	4.9	3.4	1.8	8.27**

' Decrease in score represents improvement

* .05

** .01

Table 14

Number and Percent of Subjects Improved in Classroom Adjustment Ratings

Teachers Rating Scale	N	Number of Subjects Group 1 (30)	Group 2 (14)	Group 3 (14)
Improved 1 or >	30	18 (60%)	7 (50%)	5 (30%)
Unimproved 0 or <	28	12 (40%)	7 (50%)	9 (64%)

$X^2 = 2.34$ n.s.

The highest percentage of improved subjects were those from Group 1 who received the stimulation training (60%). Forty percent of this group did not show improvement according to the teacher's observations. Half of the subjects from Group 2 improved, half did not. The lowest percent of improvement and the highest percent of unimprovement appeared in Group 3, the control group. The chi square for this analysis did not reach significance allowing these findings to be seen as trends only.

Because we expected that those who improved in skills might also be the ones who improved in classroom adjustment, we tested the magnitude of this relationship. The result of the test was not significant.

The hypothesis that special stimulation training would result in more improvement in social adjustment at school than either remedial or no intervention was not upheld. There was a trend in the expected direction, however, with the highest percentage of subjects from Group 1 showing improvement and the highest percentage of unimproved subjects belonging to Group 3.

Effects of Training on Home Adjustment

On the basis of a parent interview, 11 scales were rated by an interviewer just before the subjects were entered into the training phase and again at the end to determine if any changes in behavior were noticeable to the parents. The analysis of covariance across the three groups revealed a significant difference for only one of the eleven variables, Anti-Social Behavior, indicating Group 2 as more improved than Groups 1 and 3 (see Table 15). The algebraic sum of changes in the 11 scales from pre-test to post-test was used as a change score. Subjects showing an overall change score of +1 or more were considered improved: those with no change (0 score) or less, unimproved. The results of this analysis are shown in Table 16. The highest percentage of improved subjects, approximately three-quarters of the group, according to the parents' observations, occurred with the control group. As with the other results, Groups 1 and 2 were not different, each showing approximately half the group improved and half the group unimproved.

The parents' observed changes in adjustment do show a strong and significant relationship to improvement in skills (see Table 17). Of the 17 subjects who were the most improved in skills irrespective of group, 13 were judged to be improved at home as compared to only four seen as unimproved. Of the 18 showing least skill improvement, only six were considered improved at home, whereas 12 were judged as unimproved. As with the initial results in changes in skills the findings are not specifically related to Group 1 subjects. Comparing these findings with the data from Table 11, six out of nine - or 67% - of subjects from Group 1 most improved in skills were also improved in home adjustment; two out of seven - or 28% - of the least skill improved group were improved in home adjustment. Three of the nine - or 33% - of the most skill improved Group 1 subjects were considered unimproved in home adjustment, whereas five out of seven - or 71% - of the least skill improved Group 1 subjects were considered unimproved in home adjustment.

Table 15

Parent Rating Scale Discriminating Among Treatment Groups

	Mean Scores Treatment Group						
	1		2		3		
	Pre	Post	Pre	Post	Pre	Post	F
Anti-Social Behavior	1.8	1.8	1.6	1.2'	1.5	1.2	3.98*

' Decrease in score represents improvement

* .05 level

Table 16

Number and Percent of Subjects Improved on Home Adjustment Ratings

Home Adjustment Scale	Number of Subjects			
	Group 1	Group 2	Group 3	Total
Improved Score 1 or >	16 (53%)	8 (57%)	10 (71%)	34
Unimproved Score 0 or <	14 (47%)	6 (43%)	4 (29%)	24

$X^2 = 1.32$ n.s.

Table 17

Relationship of Improvement in C-M Skills and Home Adjustment

	Home Adjustment							
	Number of Subjects							
	Improved				Unimproved			
Skill	Gp. 1	Gp. 2	Gp. 3	Total	Gp. 1	Gp. 2	Gp. 3	Total
Most Improved	6	3	4	13	3	1	0	4
Least Improved	2	1	3	6	5	4	3	12

$X^2 = 6.65 \quad p < .01$

For Groups 2 and 3, 3 and 4 - or 75% and 100% - of the most skill improved, were considered improved in home adjustment. Again, for Groups 1, 2 and 3, 71%, 80% and 50%, respectively, of the least skill improved were considered unimproved at home.

Changes in social adjustment at home as observed by parents was not greater for the training group but rather for the control group. Thus, our hypothesis in this area was not confirmed. On the other hand, the parents did observe positive changes in the child's adjustment at home if he had shown some skill improvement regardless of group.

Effects of Training on School Achievement

All subjects were tested with the Metropolitan Achievement Test at the end of the training phase and these results were compared with similar scores from the same tests completed at varying times prior to their entry to the special program. The pre- and post-test scores[1] on the five scores derived from this test (Word Knowledge, Word Discrimination, Reading, Arithmetic and Average Grade Equivalent) were compared for any amount of improvement or decline. The upper and lower quartiles of the distributions for each of the five scores were designated as most and least improved, respectively. In this calculation, negative scores indicate improvement, using the formula pre-test minus post-test equals change score.

In general, there are no differences between the groups on improvement in academic work (see Table 18). Approximately equal percentages of subjects improved or declined in Groups 1 and 2. Only in Group 3 were some different trends shown. The higher percentage of Group 3 subjects are in the most improved group on the arithmetic, reading and total test scores. On the word knowledge and word discrimination parts of this test, a higher percentage of control subjects were in the least improved group. None of these relationships were significant, however.

Examining the number of subjects from the three groups who showed absolute gains in academic achievement revealed that 86% to 100% of the children did show some academic gain (see Table 19). However, this finding may be misleading for none of the groups showed real academic improvement when one takes into account the elapsed time between pre- and post-testing. In Table 20 the results of an analysis of covariance of discrepancy scores obtained from the achievement tests indicates clearly that all three groups showed decline in achievement from the time of initial testing to final testing. This decline seems greatest for the subjects in Group 3 who received no specialized program.

The findings from the achievement test data failed to support our hypothesis that the training group subjects would show improvement in academic performance as compared to the other two groups. Approximately a third of each of Groups 1 and 2 showed some gain but the rest of the groups showed no gains or got worse. If anything the control group showed slightly more gains than losses, especially in reading and arithmetic. These results, however, must be interpreted cautiously for the findings reflecting true improvement over time clearly indicate that none of the subjects gained academically.

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[1] Discrepancy scores were used
(see page 21)

Table 18

Number and Percent of Subjects Improved in Academic Achievement

	Gp. 1	Gp. 2	Gp. 3	Total
WORD KNOWLEDGE:				
Most Improved -1.1 to -2.3	8(27)	3(21)	2(14)	13
Least Improved -0.3 to +0.5	8(27)	4(28)	4(28)	16
WORD DISCRIMINATION:				
Most Improved -1.1 to -1.9	9(30)	4(28)	2(14)	15
Least Improved -0.4 to +0.5	9(30)	4(28)	5(36)	18
READING:				
Most Improved -0.8 to -1.8	6(20)	5(36)	5(36)	16
Least Improved -0.2 to +0.5	12(40)	3(21)	2(14)	17
ARITHMETIC:				
Most Improved -1.1 to -2.4	8(27)	3(21)	6(43)	17
Least Improved -0.4 to +0.3	10(33)	3(21)	3(21)	16
AVERAGE GRADE EQUIVALENT:				
Most Improved -0.9 to -1.8	8(27)	4(28)	4(28)	16
Least Improved -0.4 to +0.1	9(30)	4(28)	2(14)	15

Table 19

Number and Percent of Subjects Showing Gains in Academic Achievement

	Number of Subjects		
	Group 1	Group 2	Group 3
Academic Gain (- Scores)	26 (87%)	12 (86%)	14 (100%)
Academic Loss (+ Scores)	4 (13%)	2 (14%)	0 (0%)

Table 20

Comparison of Groups on Mean Academic Achievement Test Scores[1]

M A T Score	Group 1		Group 2		Group 3	
	Pre	Post	Pre	Post	Pre	Post
Reading	-.42	-1.57[2]	-.46	-1.33	-.60	-1.42
Word Knowledge	-.43	-1.26	-.40	-1.27	-.54	-1.37
Word Discrimination	-.52	-1.40	-.46	-1.21	-.45	-1.20
Arithmetic	-.37	-1.27	-.46	-1.12	-.48	-1.18
Aver. Grade Equiv.	-.46	-1.37	-.48	-1.18	-.56	-1.25

[1] Discrepancy between Grade Achievement and Chronological Age Grade Placement was used as the score.

[2] Increase in score shows improvement.

CONCLUSIONS AND RECOMMENDATIONS

This study was based on the assumption that maladjusted children with high cognitive-motor dysfunction could benefit from specialized training experiences, if the training was carried out in a comprehensive fashion and systematically applied to known areas of dysfunction. Having determined in Phase I that approximately 40% of maladjusted children in the early grades showed major evidences of cognitive, perceptual and motor dysfunction, we drew individual profiles of strengths and weaknesses in significant skill areas that directed individualized training programs. We hypothesized that such deficits in skill functioning were reversible if trained; that the children would show in addition improvements in their behavioral adjustment at school and at home and academic improvement. We tested this hypothesis using public school subjects, providing training in small groups, removing the children from their regular school classes for a half day, five days a week, for a full semester. In this design we compared improvements in the training groups with those in children who remained in regular classes, receiving no special treatment, as well as with those who were in a remedial class situation comparable to the training groups in all variables with the exception of the curriculum offered.

We have demonstrated through this experiment principally that with some specialized work offered in small groups that deficit functioning in cognitive, perceptual and motor skills can be improved beyond what could be expected as a result of maturation and normal school experiences. The children who received no specialized intervention showed very few improvements in skills; the children who received remedial instruction improved in a variety of skills but only the children in the training groups showed significant skill improvements. These results are considered confirmatory of our hypothesis even though only a very few variables reached a statistically significant level. Considering some of the conditions that were operating against positive findings which will be discussed in detail below these findings are extremely encouraging. Not only do the results point to the fact that deficit skill functioning can be improved with training but that the earlier the intervention the more likely positive benefits will result. The first grade subjects in the training group were the ones who showed the most improvement. The implications are: intervention of this type, preceding some of the regular class instruction with cognitive-perceptual-motor training materials has the greatest benefit at the earliest grade possible. With the older children there was less obvious benefit related specifically to the training.

Since the large percentage of improvement in functional skills was demonstrated by the children from the first grade, the firmly held belief of many educators that early intervention yields most positive opportunity for change was substantiated. The results of this study and our observations of the responses to CPM training shown by the children at the various grade levels led us to look more closely at the applicability of our approach to children of all ages and to consider the application of an even more individualized program for the different ages. The possibility, then, of prescribing specific training procedures that take into consideration the academic levels achieved by the children would seem feasible. Such an approach would involve a comprehensive CPM training program followed by academic instruction for those children who have developed few, if any, academic skills with minimal involvement in formal academic activities. This type of programming could be appropriate for children at the first grade and below. Children from the second grade and beyond who have developed some academic skills but who have experienced failure could receive a combined program of CPM training and academic instruction. Close coordination of CPM training and academic materials would allow opportunity for the child to put his new-found abilities into immediate practice in the classroom and to see the positive results of his efforts.

Our experience with this method and the results of this study also substantiated our belief that the implementation of prevention programs which are specific to the individual needs of the children would effectively develop skills allowing for increased readiness for academic learning.

Our results were influenced by some adverse conditions, some of which were unanticipated, some resulted from factors that we failed to control and utilize to our advantage. The subjects selected for our project represented those with the most severe adjustment problems. The evidence that there was movement in the children in these special classes, although they did not reach age-appropriate levels of functioning in the brief period of the study, raises the question of the best method of assigning resources for a school system. It appears that in our effort to select the children with the greatest cognitive-motor problems -- and we were corroborated in our selection by the views of principals, teachers and optometrists who saw the children -- that we also collected a group of children with family problems and occasionally uncorrectible physical difficulties, such as eye conditions. What has been demonstrated is our opinion that it is not always the presence of deficits alone that lead to severe maladjustment but frequently an interaction between conditions in the family, attitudes of parents, other factors in the child and what the child himself brings to the situation. Although we attempted to inform the parents of our project, of its aims and methods, and to give to them an understanding of the underlying principles, we were unable to provide intensive or continuous counseling with them directed toward relief of stress for the child in the home during the training period.

It seems likely that, if such extremely handicapped children are to be worked with within a school system, there should be a concentrated effort involving school social workers or other specialists to help alter the family climate and attitude. Such children may require removal from the home for a period of time in which they can receive the benefits of a total milieu in addition to cognitive-motor retraining and academic remediation. The school system would probably profit more from offering retraining and other help of this type to children who do show some evidence of deficits and some retardation in academic skills, but who do not have the degree of pathological behavior that was observed in our groups. The mere fact that the children were all in severe difficulties meant that their resistance to contagion of inappropriate behavior was less than would be found in some groups and there was therefore greater necessity for dealing with behavior problems, taking time from the training program. Much of the difficult behavior was manifested following a weekend or was directly traceable to incidents at home -- again supporting our feeling that much of what was done in the program was undermined by negative happenings outside the special class situation. In any similar program we would recommend systematic and intensive counseling with parents to improve their understanding of their child's atypical development and help them to alter their method of management. Based on our limited experience, parent counseling groups appear to be a suitable method.

Similarly we did not work effectively to reduce stress resulting from expectations of the regular class and curriculum. Although a general meeting was held with the teachers we were unable to devote the time and personnel to providing the classroom teacher with the information we had gained on each child through our testing and classroom program. Thus we were unable to influence the child's classroom experience, to reduce the frustrations and stressful demands experienced there. The teacher was not aware of the child's strengths and weaknesses and how these related to his disability at school and so could not alter her approach. In some cases, this contributed significantly to reduce the benefits of the special program. As an example, the children seen in the special programs in the morning missed their reading instruction in regular class. In the training group, of course, none was provided; in the remedial group, part of the time was devoted to remedial reading as needed. A few of the regular class teachers were aware of this problem and attempted to provide reading instruction at another time for those who missed it; the majority did not. At this point we can only recommend that in future programs consideration must be given to the coordination of any special class effort with the regular class teachers. A close liaison is needed with frequent exchanges of information. In addition to the benefit resulting for the children involved it also provides a valuable method of disseminating information regarding new and useful techniques to school personnel for their future use.

The results relating to improvement in classroom adjustment are similar to those reported for changes in skills in that both the training and remedial groups showed greater improvement than the control group. However, there were fewer improvements that could be related specifically to the training method. About twice as many children in the training and remedial groups showed improvement in classroom behavior as compared to less than one-third of the controls.

In the process of conducting this research, observations were made regarding the applicability and transferability of a system of intervention which was designed in a clinical setting to a non-clinical one. Regarding the cognitive-perceptual-motor training method, we discovered early in the project that the method itself which had been pre-tested with disturbed children individually and in homogeneous groups of three to six and which was theorized to follow a developmental sequence was not transferable to larger heterogeneous groups in just the same way. In the project itself it was necessary to work with groups of seven or eight children all performing at various levels within the dysfunction areas of concentration in each room. This made it necessary on a group basis to provide stimulation for some children in areas of less need while less intensive stimulation was provided for other children who could have benefited from additional time and attention given to a particular area of dysfunction. An attempt was made to structure homogeneous sub-groups in which children with the same areas of need would receive their training simultaneously. Even in the homogeneous sub-group situation here, we found it increasingly difficult to deal specifically with the individual improvement rates of the children as the project progressed. Other methods that were used to alleviate this problem were: 1) having one teacher provide individual stimulation for one child while the other teacher provided another kind of activity for the remaining six or seven, and 2) having one teacher actively working with one child while the other children in his sub-group worked at other activities. This was particulary necessary when providing the tactile-kinesthetic stimulation.

Rather than the systematic presentation of stimulation according to a child developmental sequence, we discovered that it was necessary to employ a multisensory approach, bombarding the child with stimulation in all areas of dysfunction simultaneously rather than in the carefully controlled sequence that was possible on an individual basis. It has been hypothesized that in cognitive, perceptual and motor development early patterns of perceptual and motor functions must be well developed before the cognitive areas can be successfully mastered. Because of our results we cannot conclusively refute this theory but have raised questions concerning its applicability to the behaviorally maladjusted child and the child with learning disorder. Further study would be indicated to determine whether the multisensory approach of presenting intensive cognitive, perceptual and motor stimulation simultaneously is as effective as the sequential approach of perceptual-motor development first followed by cognitive-motor. Our impression is, however, that for the behaviorally maladjusted child with learning disability who is not totally devastated in any one area of function, the intensive multisensory approach applied in a carefully, controlled systematic manner offers a positive opportunity to improve his skills. Rather than work in groups, however, it would appear that such an approach could best be offered by an itinerant teacher method.

The brief period of time afforded to this experience may have been a factor contributing to the limited results. Although a four-month period of CPM training was sufficient to develop more adequate skills in children with dysfunction when training was presented on an individual basis or in small, homogeneous groups, this length of time was not sufficient for the training situation in our project. The intensity of training was necessarily decreased in this situation; therefore, the total daily output was also lessened. The time limitation in our project, as well as the design of the CPM training groups, interfered with the opportunity for the child to consolidate his newly acquired skills and to transfer these skills to practical application in the academic classroom.

It may be that follow-up measurement may show more positive results than were seen at this time. Retesting may also demonstrate a positive relationship between skill improvement and classroom adjustment which we were unable to show at this time. However, we see the significance of intervention playing a meaningful role. Experience with other special class programs (Rubin, Simson and Betwee, 1966).(6) indicates that attention in smaller classes provides definite benefits for children whose behavioral maladjustment appears to result from deficit functioning in skills.

Behavioral adjustment at home followed a similar trend but with one difference. Although both the training and remedial groups showed slightly more subjects improved than unimproved the percentage of control group that improved exceeded both. Interestingly, there was a significant relationship between skill improvement and reported improvement at home. The subjects who were improved in skills regardless of group, were seen as improved at home in greater numbers than those who did not improve in skills. This lends further weight to the significance of skill improvement for improved behavioral adjustment. Again, measurement at a later time may add considerably to the meaning of these results.

Another observation that was made related to the extent to which other types of intervention such as effective behavior management and the use of psychological support were inherent in the method, since these approaches are an integral part of a clinical setting for disturbed children. This difference was anticipated; therefore, a part of the pre-project workshop content was designed to help the staff acquire skill in recognizing stress signals expressed on a non-verbal level. Some of the behavior that the children would present, such as temper outbursts, was viewed as a stress signal that either the level of work is too difficult, too stimulating or too boring and the staff was helped to develop skill in intervening at the appropriate level. Continuous supervision was also aimed at the development and use of these management skills in addition to increased proficiency in the method to develop cognitive, perceptual and motor skills.

The absence of other supportive services and pre-established norms which are present in both a clinic and regular school situation but not in our church situation was not anticipated to have the impact that it appeared to have on both the staff and the children. In a school or clinical setting there is the principal's office or the quiet room, there are rules and regulations which may or may not be adhered to but are present within the culture. The use of a monitor helped this situation to some extent.

The results and changes in academic achievement reflect the well-known fact that these children show very slow movement in academic functioning. Although high percentages of all subjects in all three groups showed some absolute gain, very few actually gained what they should have over the time period that elapsed between the pre- and post-testing. About one-third of each group fell into our "most improved" category but this reflected absolute gain. Two-thirds of the group either showed no change or actually declined. These results were not different for either the training or remedial group suggesting that in neither instance was there a significant impact made on measured achievement. Here again we may speculate on the long-term effects of intervention with the possibility that the improvements made in skills will have a positive effect on learning at some later time.

The use of teacher aides in our program was found to be invaluable to its actual implementation. Their contribution was most apparent in the attempt to utilize a prescriptive teaching approach. They allowed for individualization within each group so that children could more readily receive practice in CPM areas most needed rather than following a more generalized plan which would have been unavoidable with one adult per classroom.

Our experience with the aides in our project led us to view their selection, training and supervision as aspects worthy of much consideration if they are to be used effectively in the schools. Selection of individuals who enjoy working with children and who are able to appreciate a child's world while remaining at an adult level is the first consideration. Furthermore, in selecting individuals to work with groups of children who demonstrate maladaptive behavior, it becomes most important to choose those who have potential for accepting acting-out behavior in an objective manner rather than seeing it as a personal affront or a confirmation that the child is "bad." These kinds of attributes appeared to be more important to consider in aide selection than educational level and/or experience with groups of children.

We feel it is important to provide a comprehensive in-service training program and consistent supervision for teacher aides by the specialized teaching staff. In this way, the aide with knowledge of the methodology and techniques can be utilized in actual implementation of the method rather than only as a helper to the teacher in routine tasks.

We can state with assurance that we have identified those maladjusted children who have persistent learning difficulties and who require special school attention. By providing the special teacher with documented evidence of strengths and weaknesses in cognitive, perceptual and motor skills, considerable benefit was achieved in programming efforts.

Despite our inability to follow precisely the plan of devising a specific program to fit the deficit pattern of each child in this study, the value of an evaluation procedure that delineates each child's strengths and weaknesses remains evident. Primarily, such an evaluation will help the classroom teacher and the child's parents to understand better some of the child's behavior, and this understanding must perforce lead to some alteration in attitude and approach that makes for a better climate surrounding the child. Even if no special class or roving specialist is available to work with the child, if the teacher knows, for example, that the child's difficulty in completing work is a result of poor fine motor control, she will also be able to recognize that such a child will either write extremely slowly -- thereby not finishing assignments -- or he will produce quite messy work in an effort to hurry and finish. Adaptations of assignments for this child, such as allowing him slightly longer for written work and giving some special workbook exercises in fine motor control, will relieve stress both for the teacher and for the child. Such an evaluation procedure also makes recommendations more sensible, since, as has been seen in this study, similar behaviors may stem from quite different patterns of abilities and deficits.

The results on the relationship of skill improvement to training are indicative of the direction such programming should take. The improvements reflected by the remedial class contribute to the view that for most of the children, especially those who are older, beyond the first grade, that intensive remedial learning experiences are necessary components of the program.

PROPOSED MODEL OF SCHOOL INTERVENTION

On the basis of this research, including information derived from the evaluation phase (see Volume I), it is possible to make some recommendations regarding a model of intervention that is aimed at providing assistance to children with learning and behavior problems in the elementary grades.

Identification of children who may be considered "high risk" for later school maladjustment may be reliably performed by teachers who can be easily trained to use their observational skills to recognize those whose adaptation is atypical for the group. Instruments such as the Behavior Checklist can be employed as early as kindergarten as the initial step. Employing a comprehensive battery of tests, administered and scored by personnel with a minimum of training and experience under the direction of professionally trained psychologists can provide the screening that is essential to the selection of subjects who are high in cognitive, perceptual and motor dysfunction and who require special programming. Some children are in need of and can benefit from cognitive, perceptual and motor training prior to the introduction of formal learning instruction. Homogeneous grouping for CPM stimulation in primary unit programs already implemented by some school districts provides the opportunity for this type of programming to be instituted. For some children, especially those in kindergarten or first grade, whose deficits are few, and the older ones where some academic skills are established, supplementary training through a specialist program may be the method of choice. In some instances the classroom teacher may be advised by the specialist consultant on the methods and materials applicable to those in need; for others, a daily or three times weekly session, with the specialist apart from the regular class, may provide the needed skill strengthening. For those children beyond the first grade who show behavioral maladjustment and major cognitive-perceptual-motor dysfunction, special classes combining both training and remedial education may be required. In all instances, close coordination of the specialist's efforts with those of the classroom teacher and the family are an absolute necessity. For some, additional services from mental health facilities, such as psychotherapy, parent counseling, and drugs, may be needed as well.

Identifying the high risk pupil early, intervening with programs and attitudes based on an understanding of the relationship of cognitive-perceptual-motor dysfunction to learning disability and to maladjusted behavior is the ultimate goal. Further research studies will bring improvements and refinements in our screening methods as well as in the techniques required to bring about restoration of capacities to maintain an adjustment in a normal school atmosphere.

FUTURE RESEARCH

The phenomenon of cognitive-motor dysfunction, which we have demonstrated in the evaluation phase to be present in approximately 40% of maladjusted school children, may be present in even higher proportions in populations where opportunities for appropriate stimulation in information processing, language development and symbolic usage, or where experience with coordinated motor behavior may be reduced, absent or poorly organized. Utilizing the methods developed in this study may allow a better description of the programming needs of children described as culturally deprived or disadvantaged.

Treatment methods employed in outpatient clinics and residential centers for emotionally disturbed children are known to have varied effectiveness. Our research findings would suggest that many of the children treated unsuccessfully by psychotherapeutic methods alone may have cognitive-motor dysfunction as a major facet of their disturbed adjustment. For these children, a psychoeducational approach might be more rewarding. Further investigations of clinical populations, both outpatient and inpatient, may indicate the extent to which this is true. Combined programs of cognitive-motor retraining and psychological counseling may be shown to have unusual effectiveness with many of the children who heretofore have made little progress.

Further study of the sample identified and measured in this project is certainly indicated. A follow-up in a few years and again in later adolescence may allow us to determine the long-range effects of the programs we offered. We would also be able to relate the early test findings to later adjustment determining the relationship of cognitive-motor dysfunction to later adjustment difficulties, drop-out or delinquent behavior. Such a follow-up would further elucidate the course of this phenomenon over time and provide a means of relating signs and symptoms at adolescence to demonstrated evidences of cognitive-motor dysfunction at an earlier age.

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APPENDIX A

BEHAVIOR CHECKLIST

BEHAVIOR CHECKLIST

TRUCTIONS: Place one check mark in the margin opposite those items which are repre-ntative of this child's typical behavior. Use two check marks for those items which shows more frequently. Use three check marks if the behavior item is most outstand-g by its frequency.

B. The rater should be very familiar with the child's classroom behavior over a riod of time. Take the average child in a regular classroom as your basis for com-rison.

me:________________________ Sex:____ Birth Date:______ Grade:_____ Date:______ Teacher:____________

. Very sensitive to criticism.
. Expresses feelings of inadequacy about self.
. Never makes self known to others.
. Is excessively neat or finicky about work or possessions.
. Overconforms to rules.
. Aggressive in underhanded ways.
. Seeks attention excessively.
. Very short attention span.
. Can't work independently.
. Shows signs of nervousness (nailbiting, crying, tics, rocking).
. Overly preoccupied with sexual matters.
. Daydreams.
3. Seems to fear being assertive even in ordinary ways (asking to go to toilet, defending self, making legitimate messes, joining in allowable noisy play).
. Is receiving, or recommended, speech correction.
5. Poor coordination (trouble with buttoning, tying shoes, getting shoes on correct feet).
6. Can't take turns: "Me first."
7. Lacks responsibility for self, always has excuse for shortcomings.
8. Resists limits or rules in group games.
9. Tendencies toward enuresis or soiling of clothing.
0. Very messy with work or belongings.
1. Negativistic: "I won't."
2. Difficulty in handling working materials, such as crayons, scissors, paste, etc.
3. Considered an isolate in class.
4. Engages in much solitary play.
5. Displays infantile behavior (crawling, whining, clinging, sucking, chewing, etc.).
6. Makes odd noises.
7. Makes irrelevant or inappropriate remarks.
8. Misinterprets simple statements.
9. Is disoriented in space; is confused as to directions given.
0. Shows excessive fantasy preoccupation.
1. Tendencies toward primitive hostilities, temper tantrums, wild destruction.
2. Holds back in free play.
3. Antisocial tendencies (steals, lies, destroys property, bullies, defies, resents discipline).
4. Frequently tardy, frequently absent.
5. Poorly cared for before leaving for school.
6. Easily fatigued.
7. Often ill; other physical problems.
8. Feigns illness.
9. In academic area, evidence of underachievement, or overachievement, in relation to ability.

eference: Emotionally Handicapped Children and the Elementary School. Eli Z. Rubin, Clyde Simson and Marcus Betwee, Wayne University Press, 1966.

APPENDIX B

ACTIVITY DAY

1. Training Groups

2. Remedial Groups

3. Control Groups

ULATION TRAINING SESSION IN PERCEPTUAL AND MOTOR DEVELOPMENT ROOM SECOND WEEK

achers 8 Children

	Activity	Hall	Classroom	Teacher	No. of Children
05	Chalkboard Activity Scribbling Double Circles Figure Eights Following a Path Geometric Stencils		x	Teacher 2	2
05	Worksheets - Frostig V-M (Independent activity)		x	Teacher 2	2
05	Mat work Rolling over in different directions-forward and backward somersaults Balance activity with resistance Spinning on different body parts	x		Teacher 1	4
20	Brushing (Tactile Stimulation)	x		Teacher 1	1
	Free Mat Work	x		Teacher 1	3
	Rolling over, etc.				
20	Seat Work Geometric stencils Pegboards Copying patterns		x	Teacher 2	3
25	Brushing (Tactile Stimulation)		x	Teacher 2	1
25	Puzzles Coloring		x x	Teacher 2	3
20	Walk on a line Walk on balance beam (wide side) forward backward sideways eyes open, eyes closed	x x		Teacher 1	4

ULATION TRAINING SESSION - continued SECOND WEEK

	Activity	Hall	Classroom	Teacher	No. of Children
7	Free skipping, running, jumping with weights			Teacher 1	3
	Brushing (Tactile Stimulation)	x		Teacher 1	1
2	Groups switch from classroom to hallway				
4	Chalkboard activity Scribbling Double Circles Figure eights Following a path Geometric stencils		x	Teacher 2	2
8	Worksheets Frostig V-M		x	Teacher 2	2
5	Mat Work Rolling over in different directions-forward and backward somersaults Balance activity with resistance Spinning on different body parts	x		Teacher 1	4
5	Brushing (Tactile Stimulation)	x		Teacher 1	1
	Free Mat work Rolling over, tumbling, etc.	x		Teacher 1	3
5	Chalkboard activity		x	Teacher 2	2
	Frostig Worksheets-V-M		x	Teacher 2	2
5	Seatwork Geometric stencils		x	Teacher 2	4
	Pegboards Copying patterns		x		
5	Walk on a line Walk on balance beam Relay with weights on legs				4
0	First cab arrives Puzzles Coloring		x	Teacher 2	5
8	Second cab arrives Puzzles Coloring		x	Both teachers	2
0	Last cab arrives				0

ULATION TRAINING SESSION IN COGNITIVE AND PERCEPTUAL DEVELOPMENT ROOM SECOND WEEK

achers 8 Children

	Activity	Hall	Classroom	Teacher	No. of Children
5	Coloring Arithmetic Bingo		x	Teacher 1&2	8
5	Rhyming objects		x	Teacher 2	4
5	Rhyming worksheets		x	Teacher 1	3
5	Rhyming worksheets	x		Teacher 1	1
5	Lotto game		x	Teacher 2	4
5	Work on seasons - charts and pictures		x	Teacher 1	4
5	Repeating poems		x	Teacher 2	7
5	Concentration game	x		Teacher 1	1
5	Clean-up				

achers 8 Children SEVENTH WEEK

	Activity	Hall	Classroom	Teacher	No. of Children
05	Song - Memory	x		Teacher 1	3
05	Categorization Puzzles & Story Pictures		x	Teacher 2	2
30	Thinking skills worksheets	x		Teacher 1	2
30	Beginning sounds worksheets	x		Teacher 1	1
7	Rhyming worksheets	x		Teacher 1	2
7	Thinking skills worksheets	x		Teacher 1	1
7	Puppet stories	x		Teacher 1	2
2	Scrapbook Visual discrimination Selecting geometric shapes in magazine pictures (group activity-taking turns)		x	Teacher 2	4
0	Bouncing balloons With hands With paper towel rolls	x		Teacher 1	4

TIMULATION TRAINING SESSION (SEVENTH WEEK) - continued

ime	Activity	Hall	Classroom	Teacher	No. of Children
0:08	Jumping over rope Suspended between two doors	x		Teacher 1	4
0:10	Form stencils (Whitman) Practice		x	Teacher 2	3
	Make-a-picture puzzles		x	Teacher 2	1
0:20	Circle game seated on floor Passing bean bags from left to right behind back chanting left-right, left hand behind back, pass bean bags in from-right, right Drills in left-right from seated position	x		Teacher 1	4
10:25	Coloring (independent activity)		x	Teacher 2	1
	Chalkboard work Figure eight Double circles		x	Teacher 2	2
10:32	Children switch from hall to classroom, classroom to hall				
10:34	Scrapbook Visual discrimination Selecting geometric shapes in magazine pictures (Group activity-taking turns)		x	Teacher 2	4
10:33	Bouncing balloons With hands With paper towel rolls	x		Teacher 1	3
10:40	Jumping over rope Suspended between two doors	x		Teacher 1	3
10:44	Form stencils (Whitman) Practice		x	Teacher 2	4
	Make-a-picture puzzles (contd)		x	Teacher 2	1
10:52	Circle game seated on floor Passing bean bags from left to right behind back chanting left-right, left hand behind back, pass bean bags, right, right				3

The operation of one morning's schedule in Remedial Room:
(X*-Teacher X^1-Teacher Aide)

ime	Activity - A.M.		Classroom	Hall
9:15-10:00	Unstructured activity - children usually select games of their choice. This a.m. game consisted of play store. Items for sale were displayed, money distributed to buyers; storekeeper operated cash register, made change. All children participating.		X*	
	Directed Reading Activity - Teacher proceeds by asking children questions that are related to their personal experience and story, discussion of title, action taking place in picture, possible outcome, suggested questions to be answered at end of story; introduce new vocabulary; read story orally; questions regarding factual information gathered from story; determining relationships between initially proposed questions and factual questions; questions requiring inferential reasoning, etc. Follow-up-Review Pronouns (he-she) Group 2 - Teacher	Reading Skills Exercises - Group III. Flash cards (Review words from previous day's reading vocabulary.) Introduce following day's reading vocabulary. Aide later calls words, children identify word by drawing line under word. Time Exercises-Discussion of Breakfast, Lunch, movie time (uses clocks made by teacher and pupils) naming days of week, ordering days of week (15 minutes) Groups 1 & 3-Teacher Aide	X*	X^1
10:00-10:30 10:00-10:30	Independent Workbook Exercise (1) "Auditory Perception of Initial Consonant "J"; (2) Recognizing root words; (3) Ordering events; (4) Rhyming (several children were behind in workbook exercises which accounted for the four activities during this period). Group 1 & E-Teacher	Simon Says: Procedure - Children read statement from card, then execute or dramatize action denoted, e.g. Simon Says: Hop Like a Rabbit. Bark Like a Dog. Fly Like a Bird. A Surprise Birthday Gift Group 2-Teacher Aide	X*	X^1

The operation of one morning's schedule in Remedial Room:
(X*-Teacher X^1-Teacher Aide)

Time	Activity - A.M.		Classroom	Hall
10:30-10:45	Directed Reading - Group 3 One child participating. Different basal reader employed due to child's attraction for pictures and stories in this particular book (Day in Day out) Teacher Workbook Exercise	Workbook Exercise Groups 1 and 2 Teacher Aide	X*	X^1
10:45-11:00	Planned Listening Exercise- S.R.A. Materials. All children participating. Teacher and Aide			
11:00	Ready for Dismissal - Secure games, books, materials, etc. Cab drivers arrive; children dismissed. Teacher and Aide.			

Daily Time Distribution of Subjects for Control Group Children

First Grade

Reading	60 - 90 minutes
Arithmetic	30 minutes
Writing	30 minutes
Phonics	30 minutes
Language	20 minutes
Science	20 minutes
Gym, Music and Art	Weekly periods of 20 - 40 minutes

Second Grade

Same as above with the addition of Spelling and more time allotted for Health and Science

Third Grade

Same as second grade with the addition of Social Studies

APPENDIX C

SAMPLES OF MATERIALS

TRAINING GROUP:

1. Fine Motor Control
2. Visual Perception
3. Non-Verbal Integration
4. Symbolic Integration

REMEDIAL GROUP:

1. Phonics
2. Reading - Experience Stories
3. Reading - Worksheets

TRAINING MATERIALS

The materials for each training sequence are arranged in order of increasing complexity as described previously (see Table 3, page 8). Examples from several of the sequences are presented here.

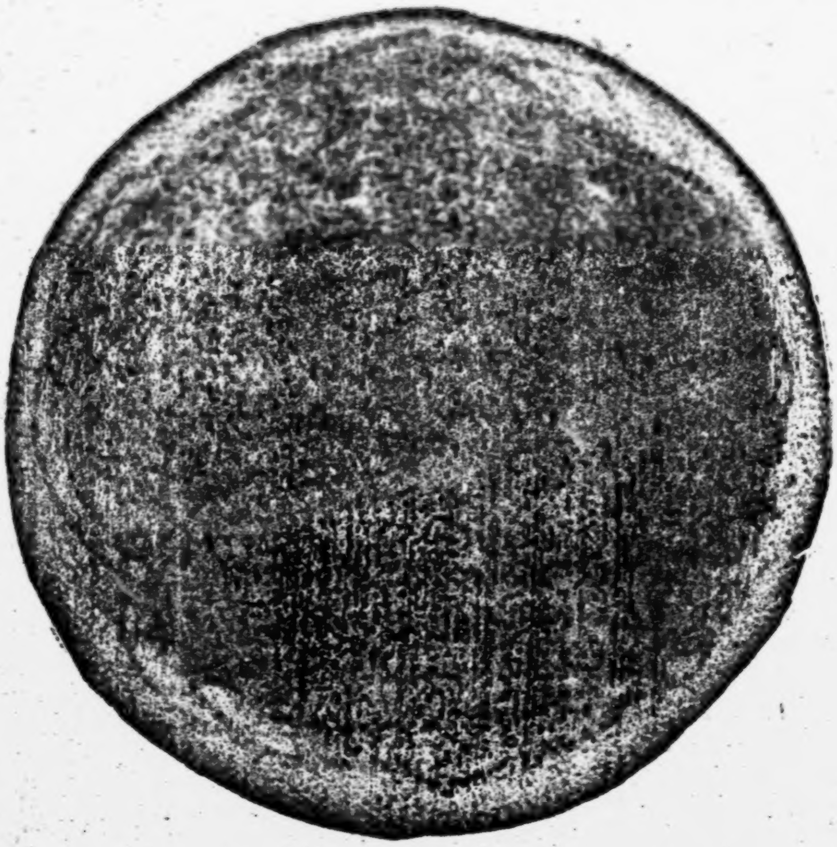
For the fine motor control sequence, examples of the geometric form patterns and stencils for tracing, visual motor worksheets and tracing and coloring worksheets are included. Similar materials from the visual motor series of the Frostig Visual Perception Program fill out the training sequence.

For the visual perception sequence, examples are provided of the visual discrimination and perceptual constancy worksheets. Original items devised for this program, as well as items from the Frostig Visual Perception Program and Continental Press, are included.

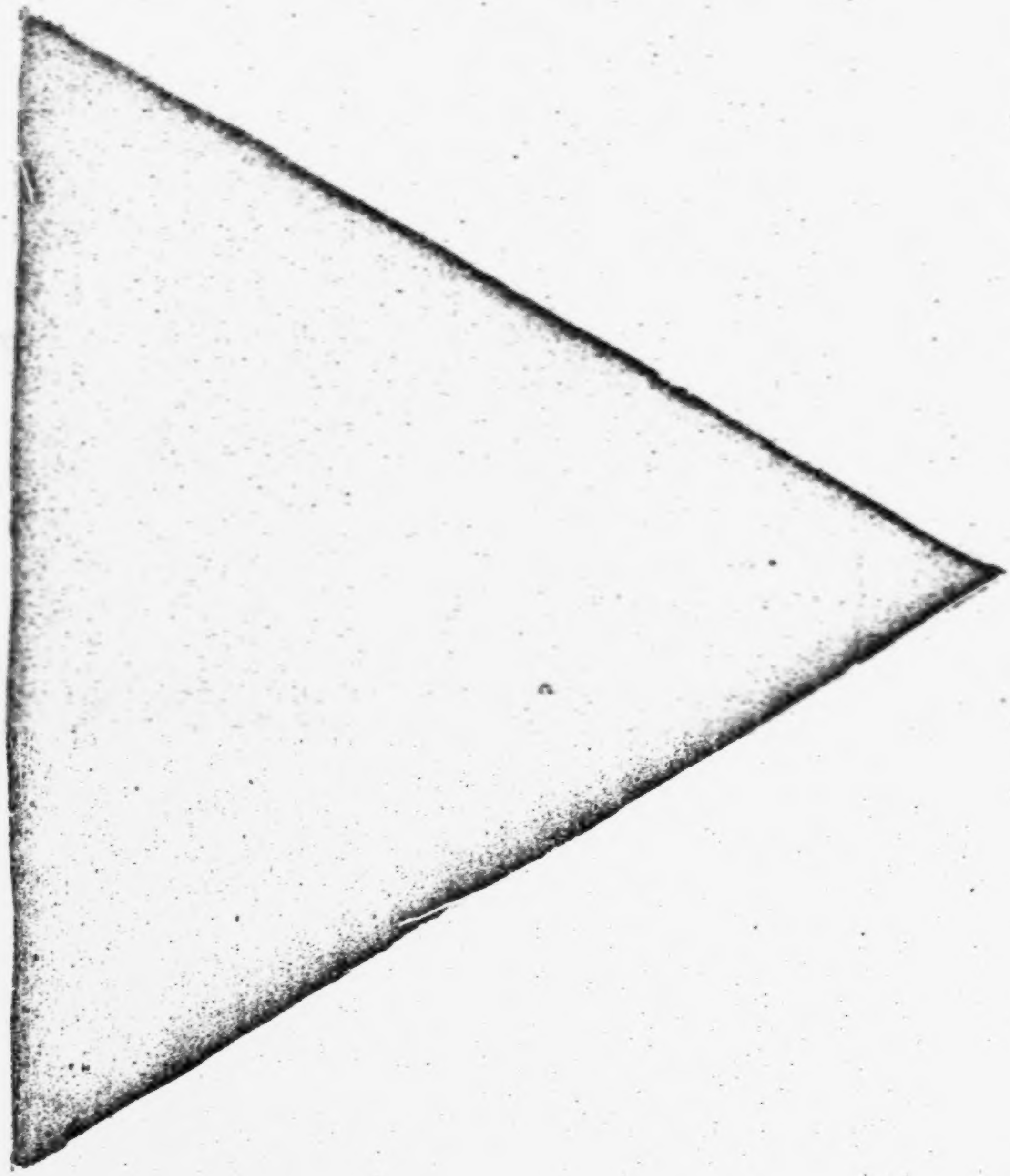
For the non-verbal integration sequence, puzzles in a graded series, visual motor worksheets from Continental Press and spatial relations worksheets from the Frostig Visual Perception Program were used.

The materials for the symbolic integration sequence included useful language and thinking skills worksheets and educational games.

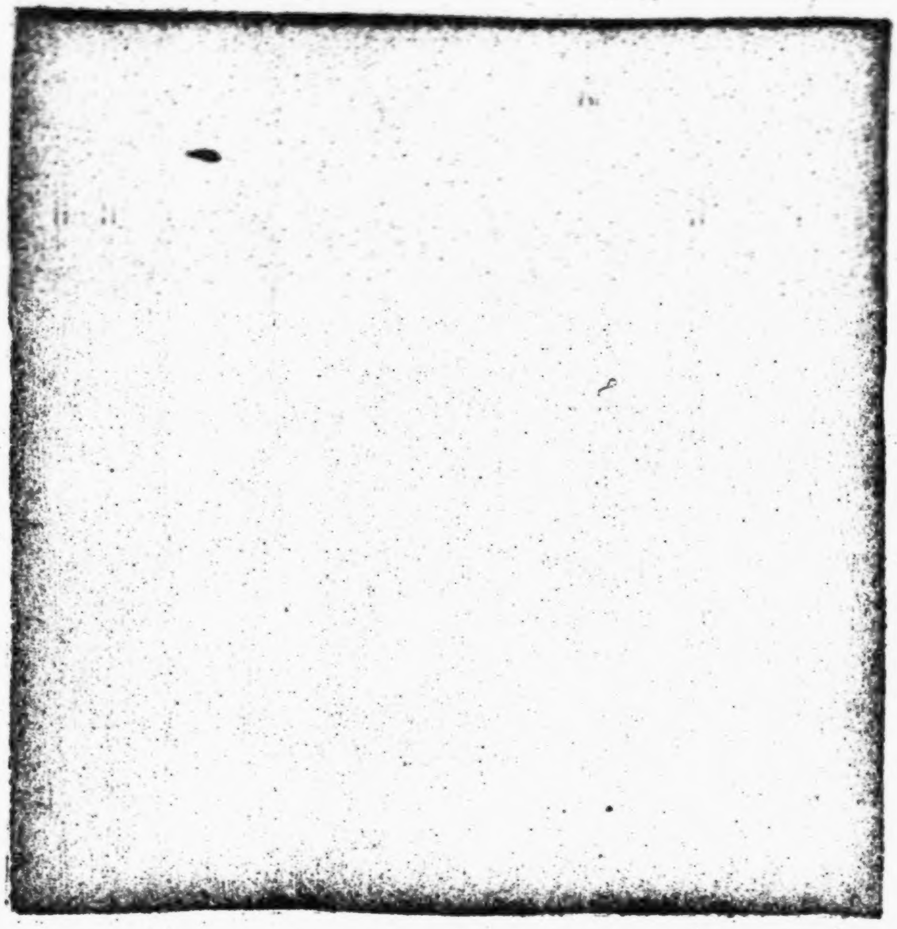
FINE MOTOR CONTROL



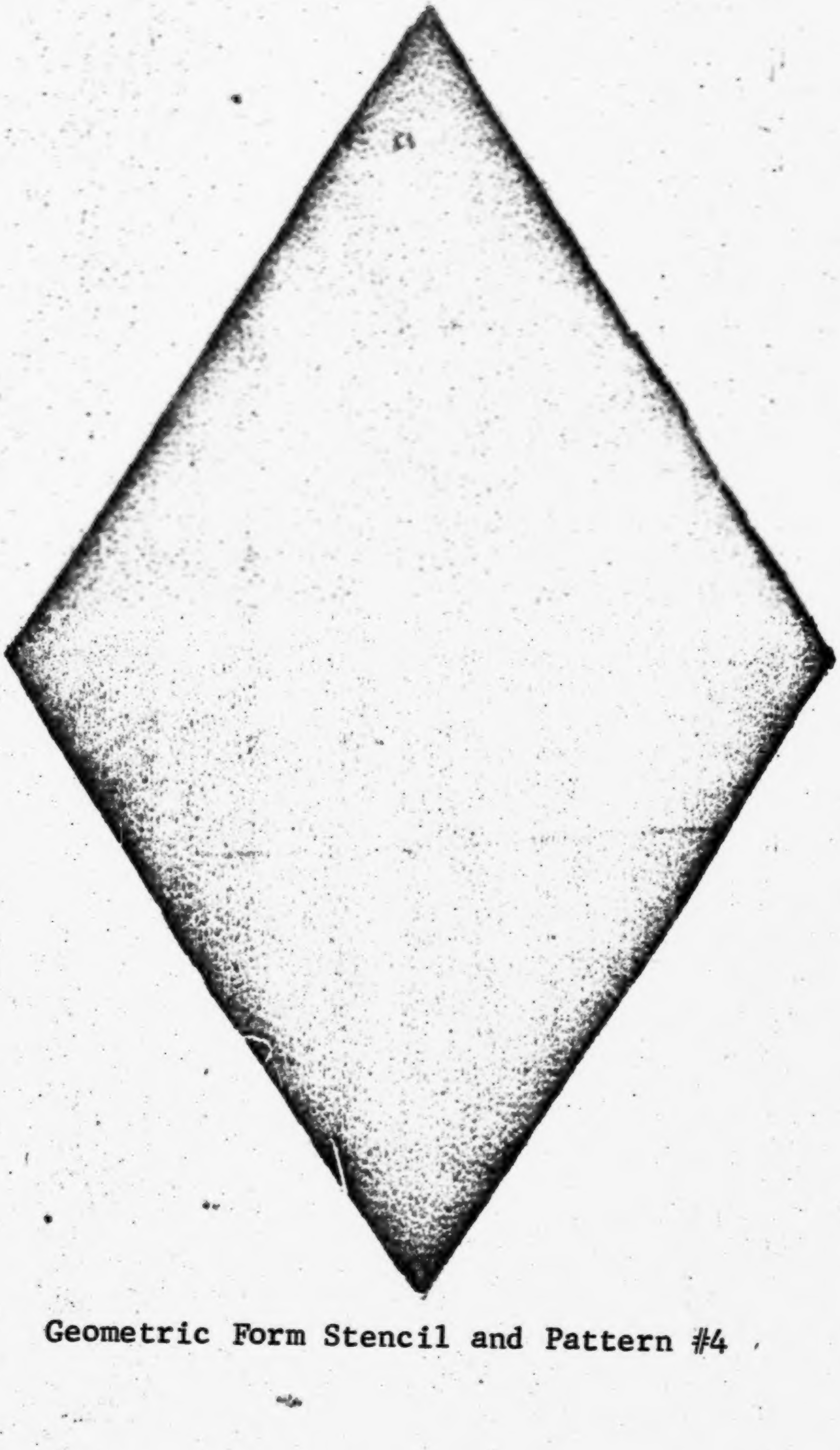
Geometric Form Stencil and Pattern #1



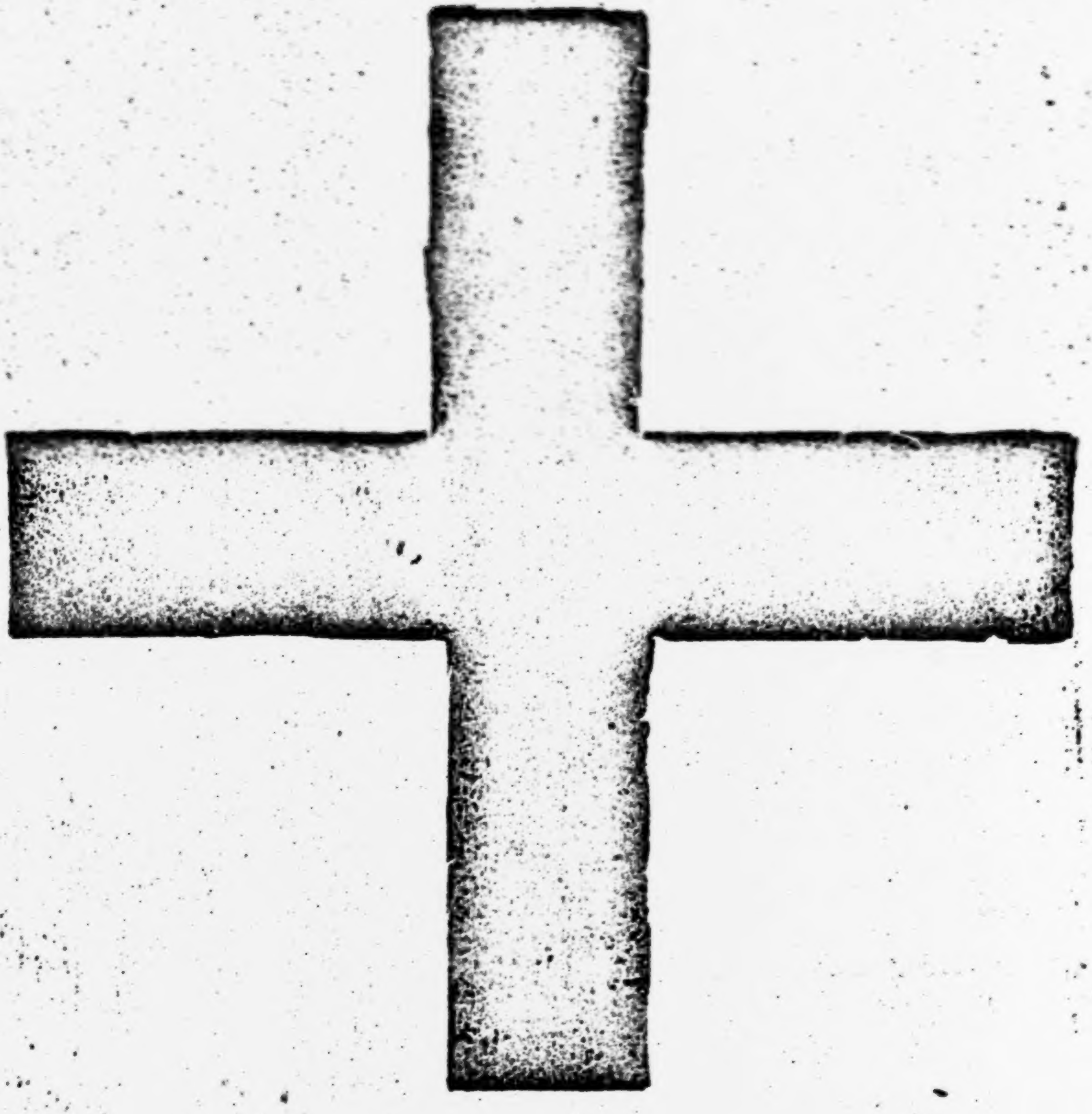
Geometric Form Stencil and Pattern #2



Geometric Form Stencil and Pattern #3

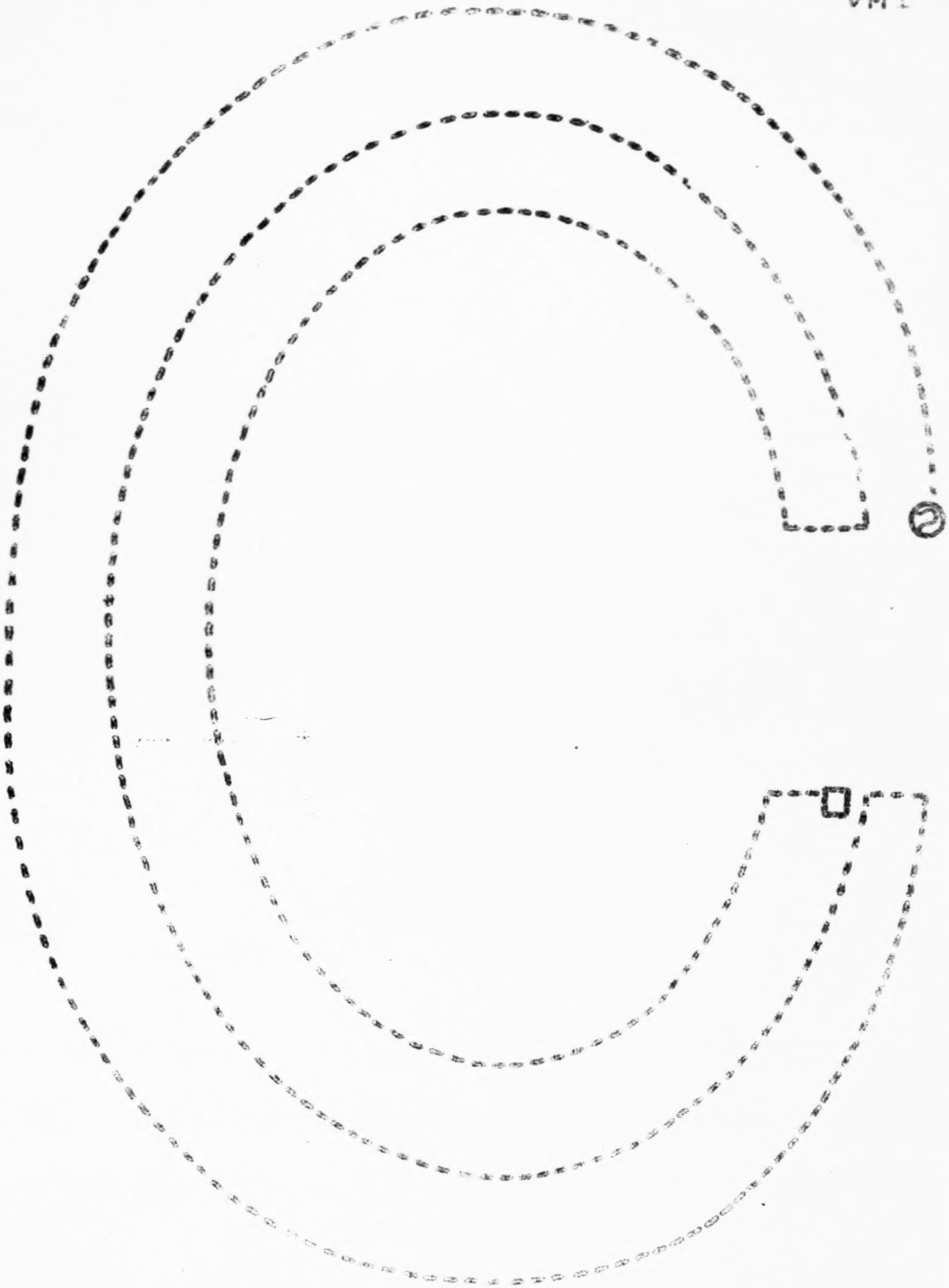


Geometric Form Stencil and Pattern #4

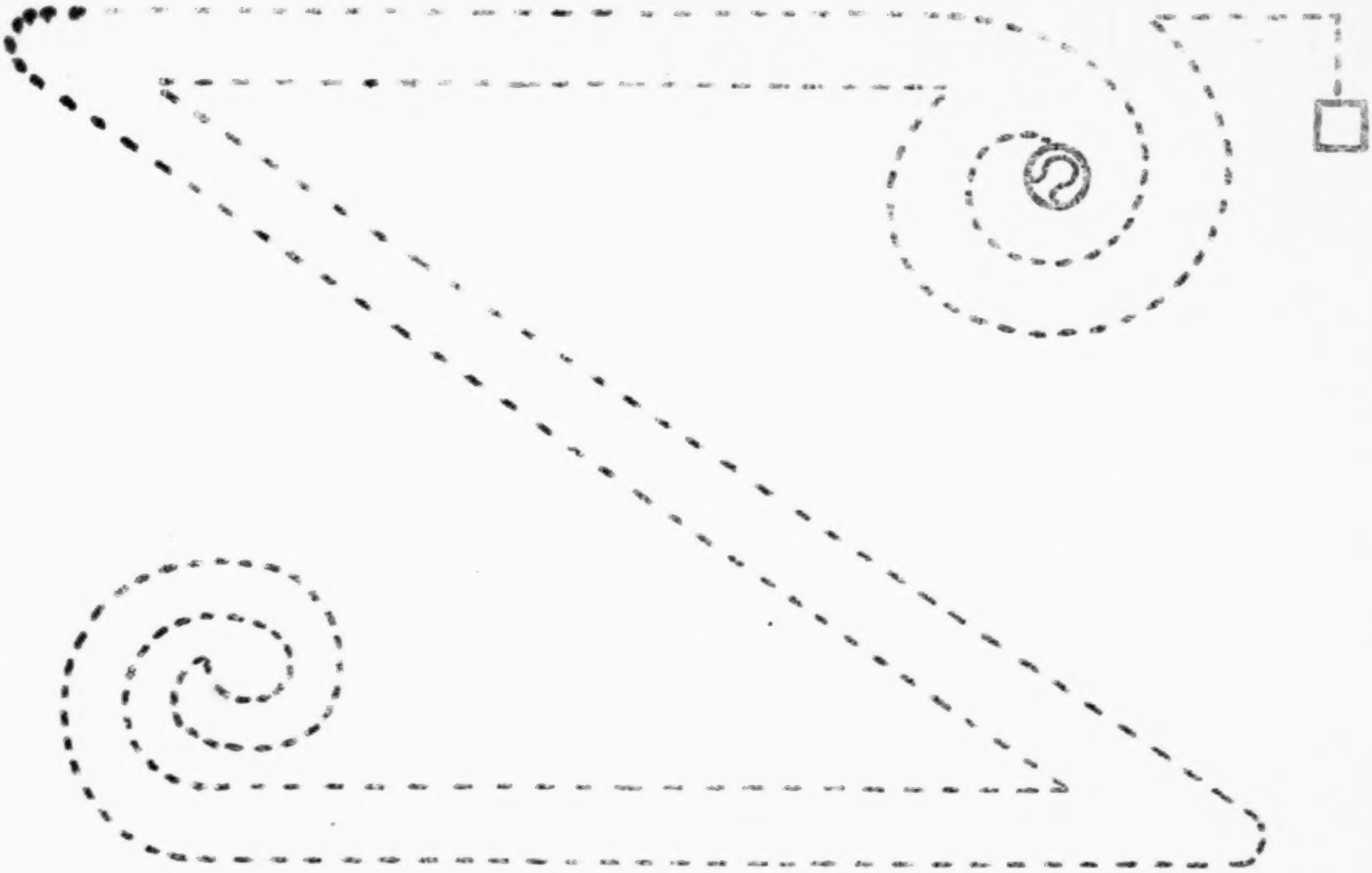


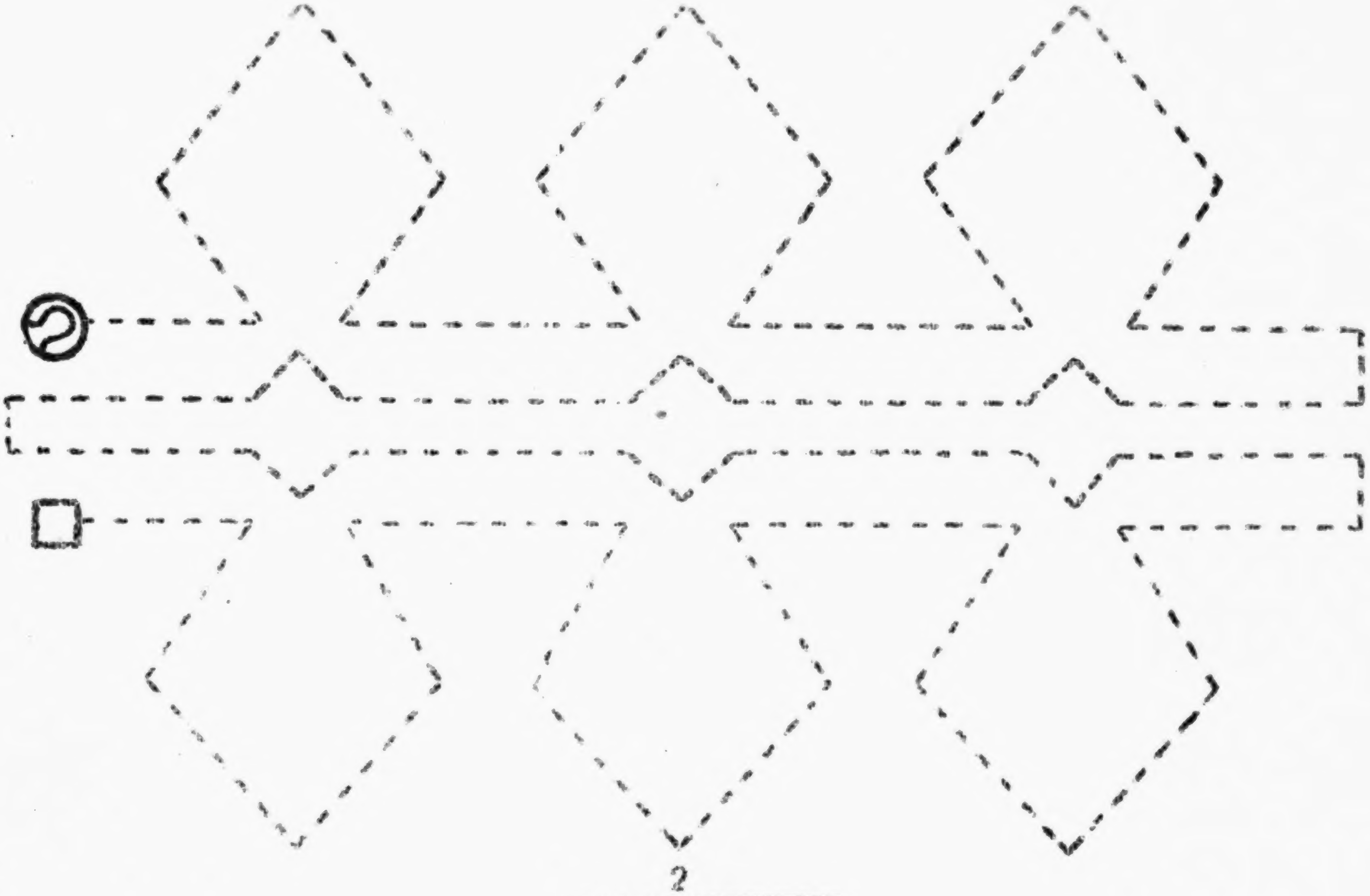
Geometric Form Stencil and Pattern #5

VMI



TRACING WORKSHEET





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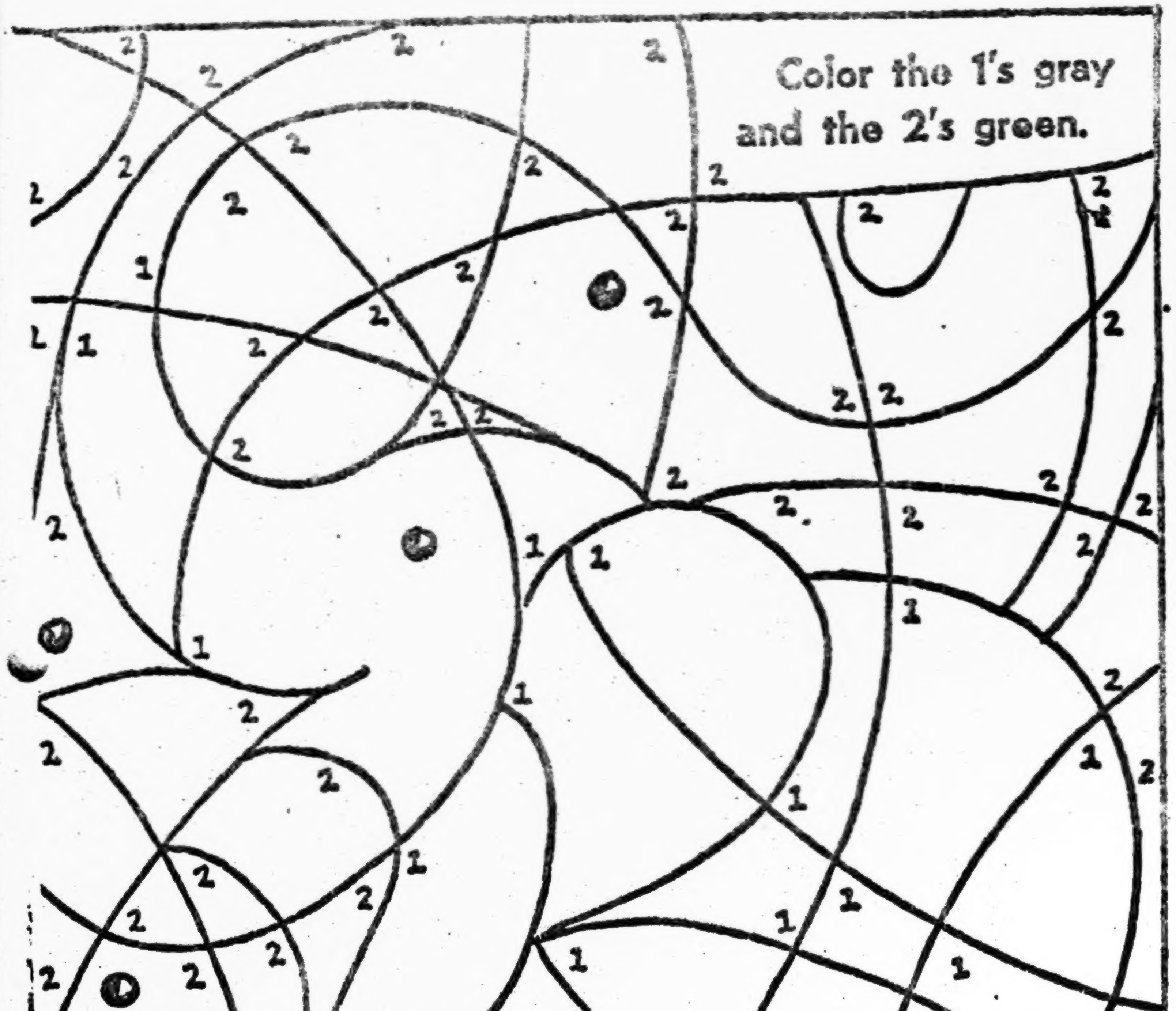
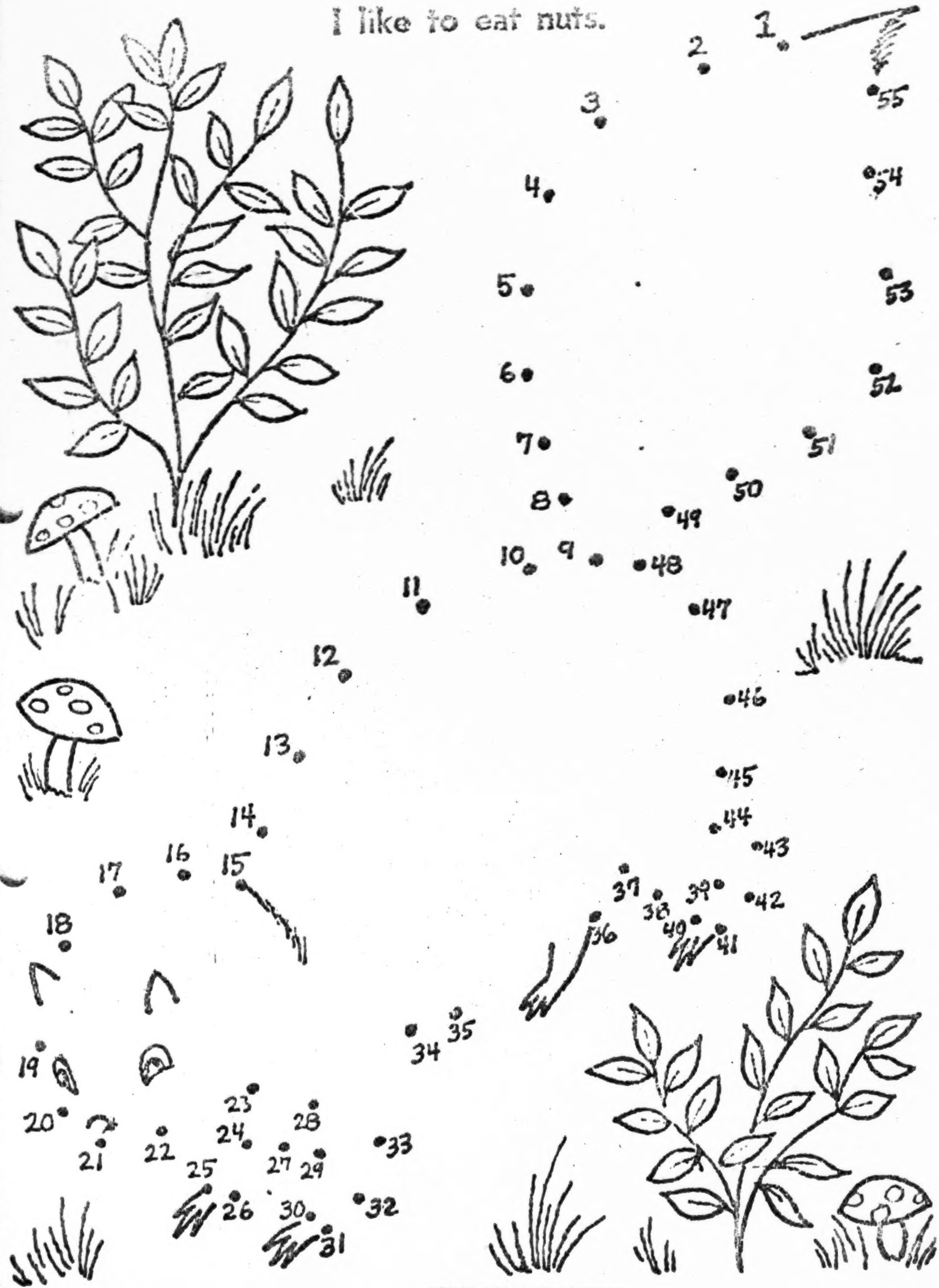
TRACING WORKSHEET



Color the 1's gray and the 2's green.

COLORING WORKSHEET

I like to eat nuts.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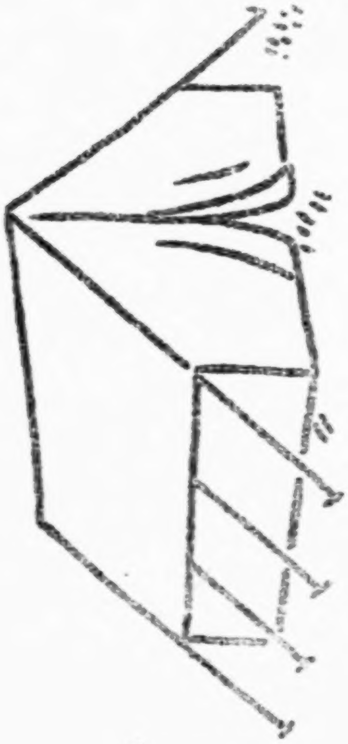
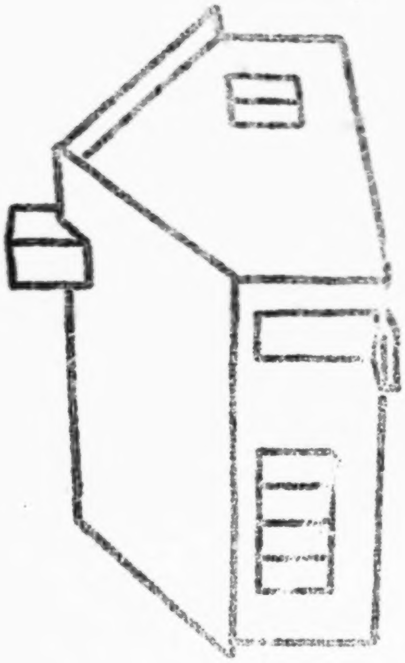
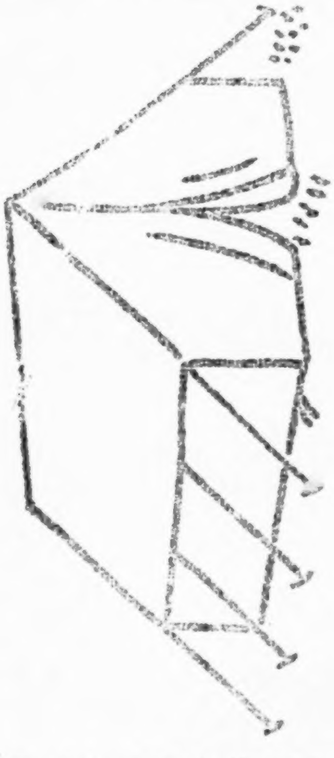
COLORING WORKSHEET

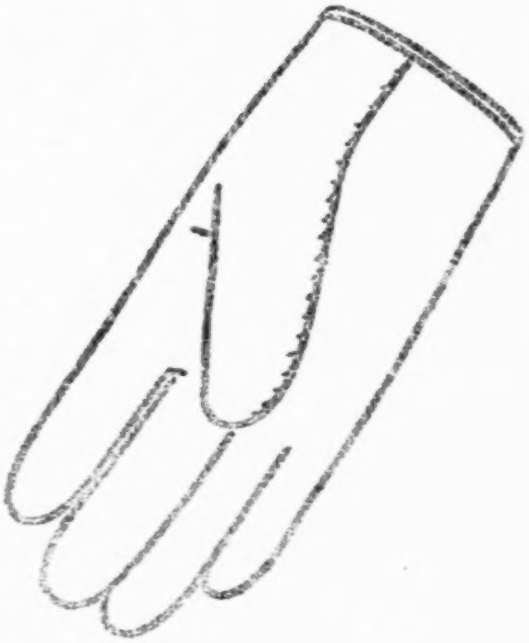
VISUAL PERCEPTION

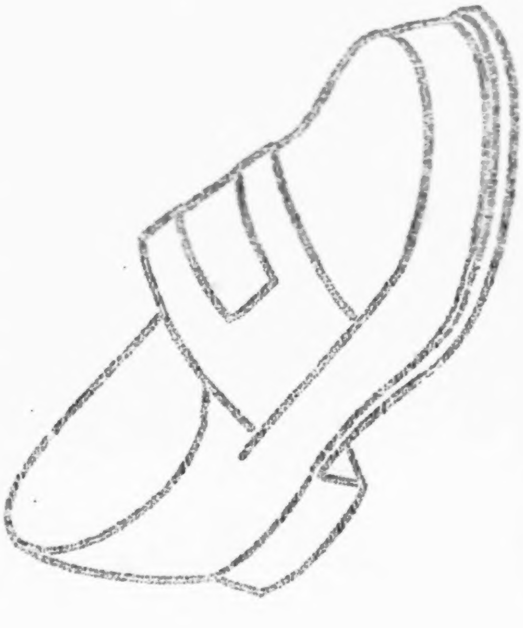
V DII

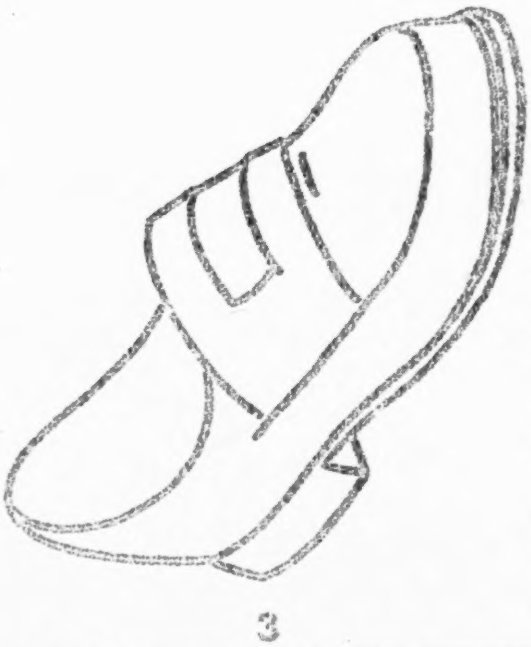


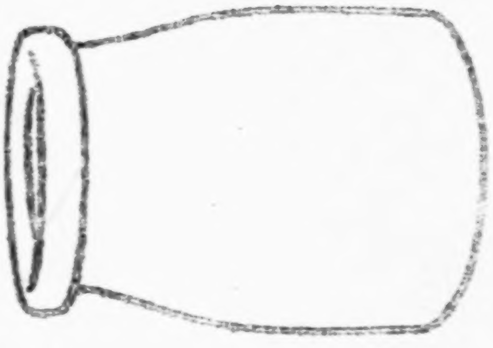


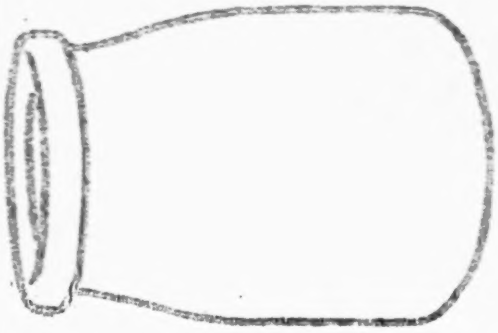


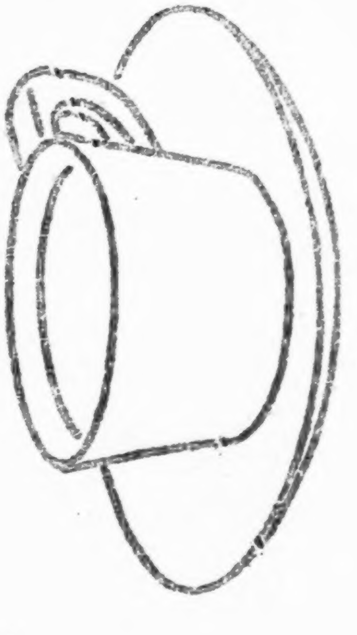












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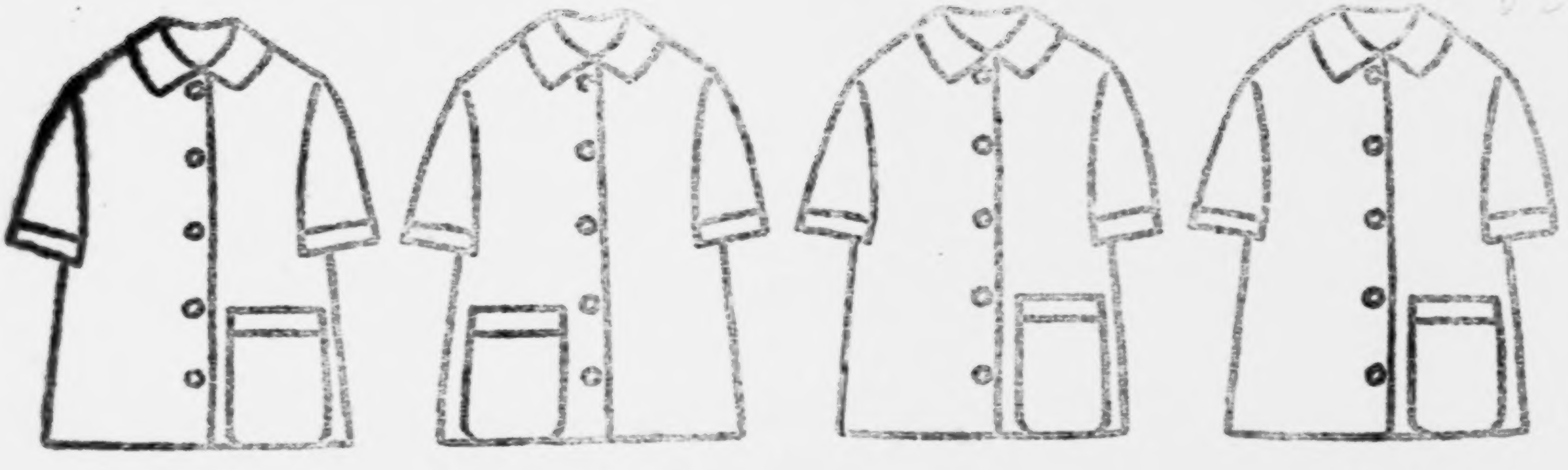
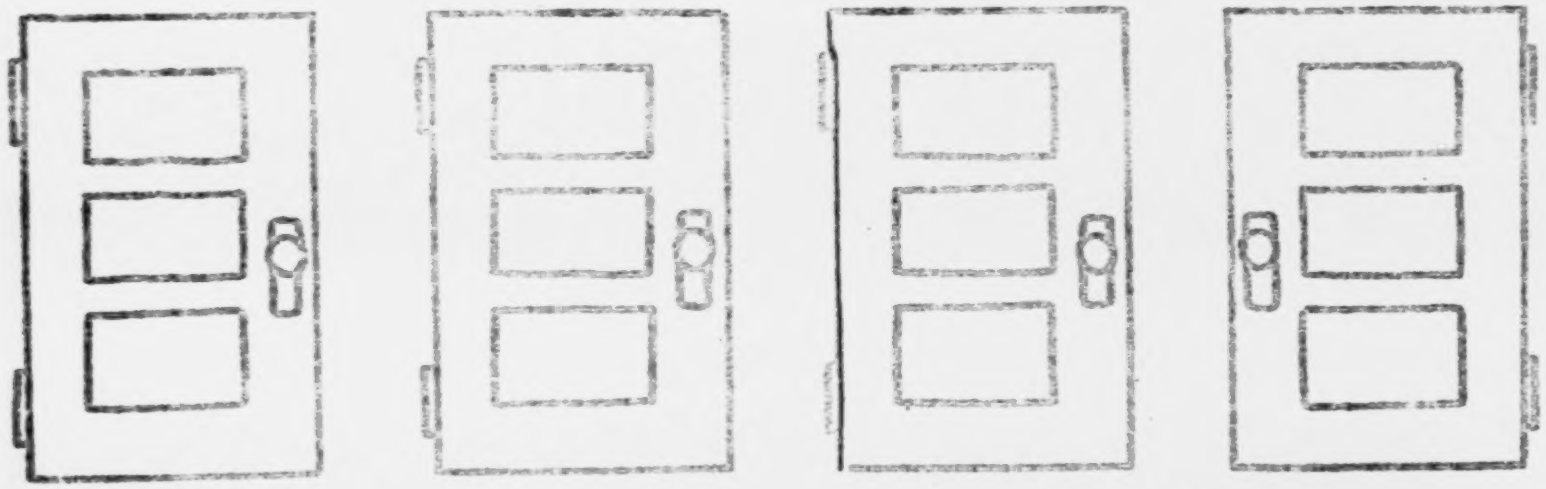
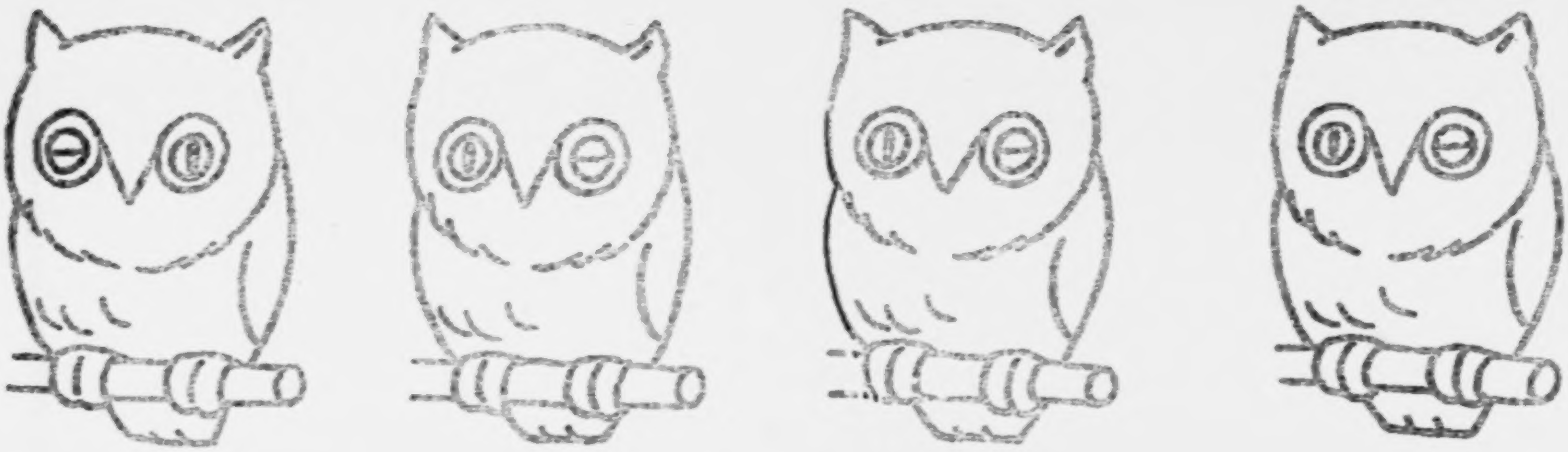
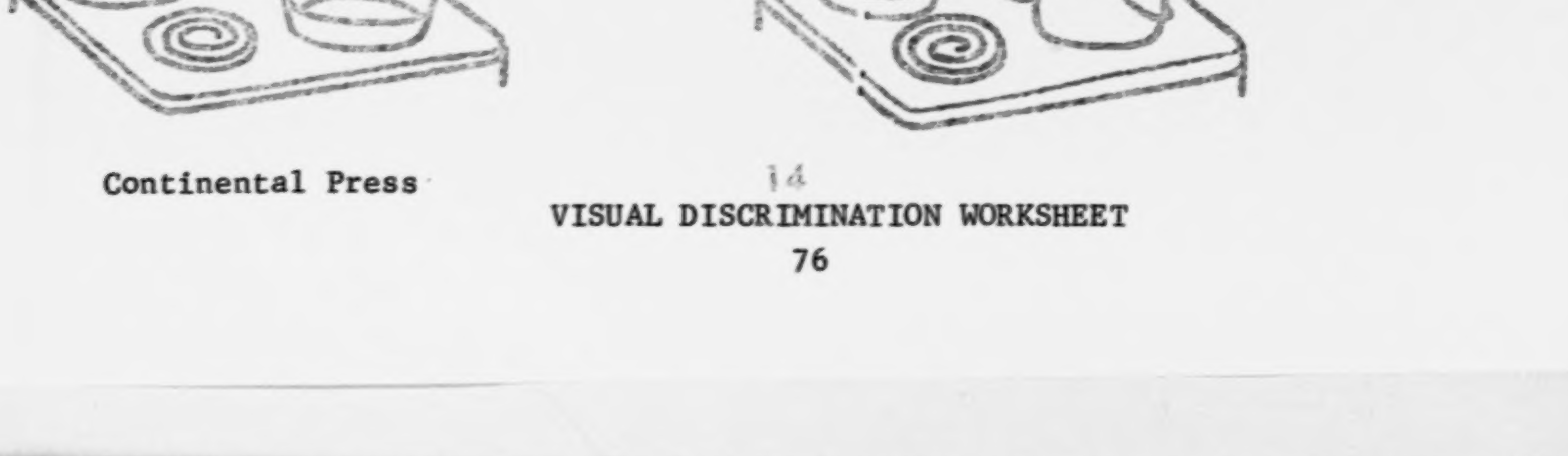
3

VISUAL DISCRIMINATION WORKSHEET









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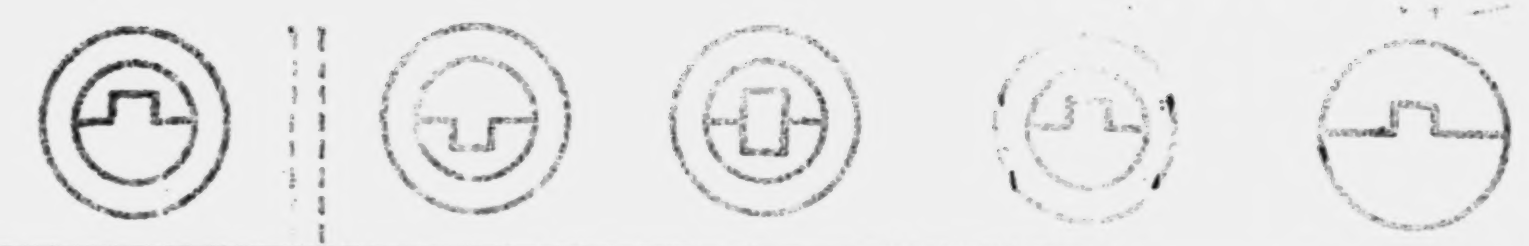
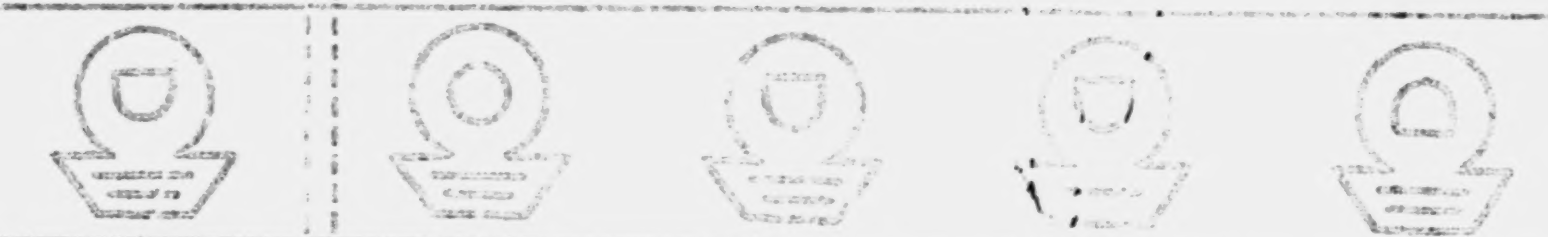
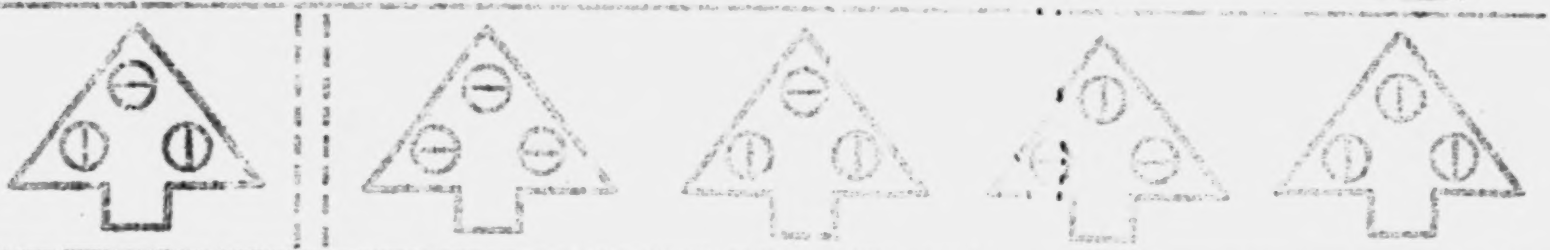
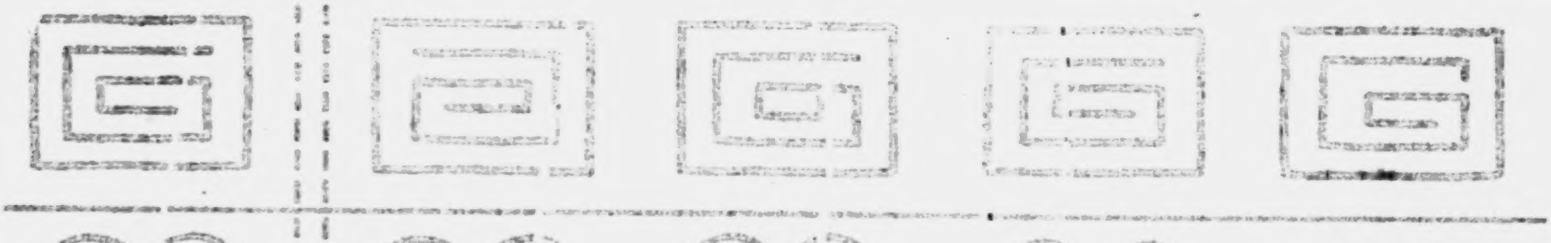
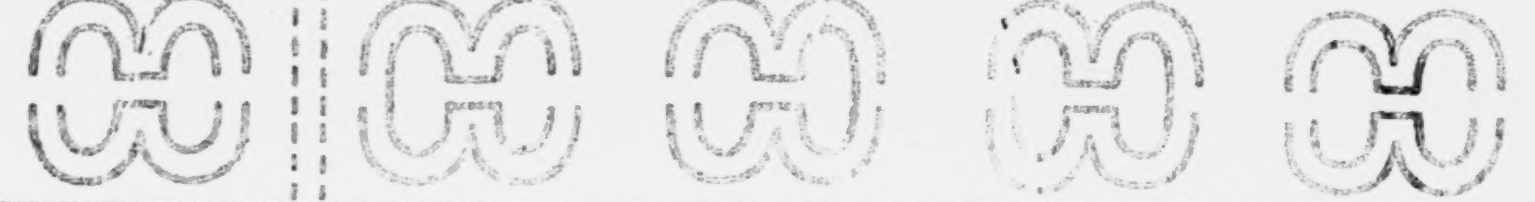
VISUAL DISCRIMINATION WORKSHEET

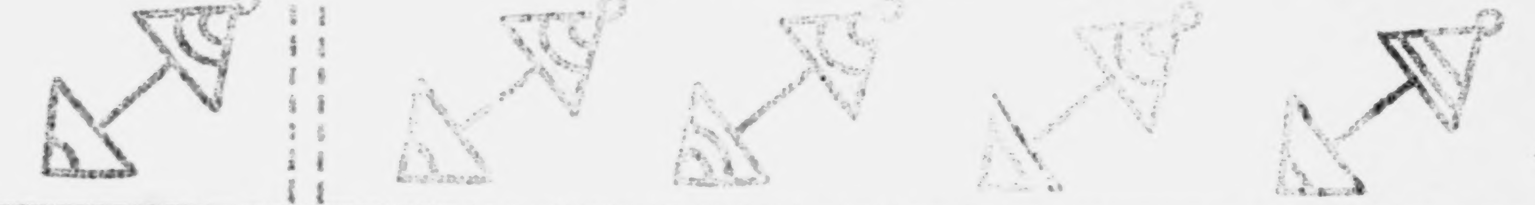


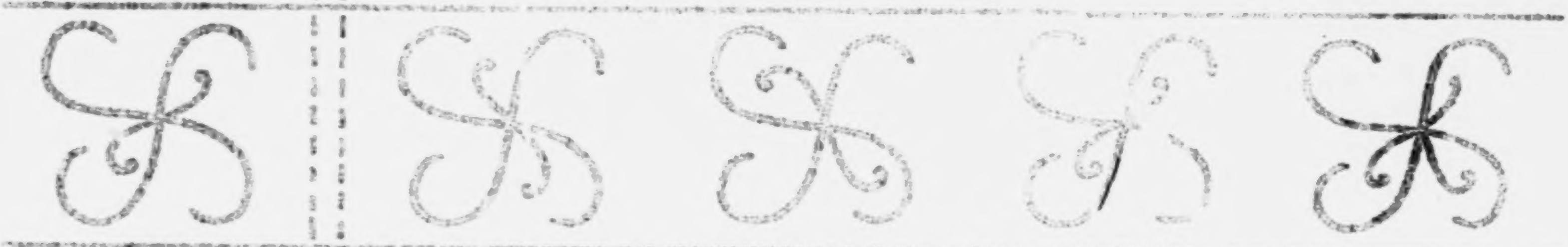


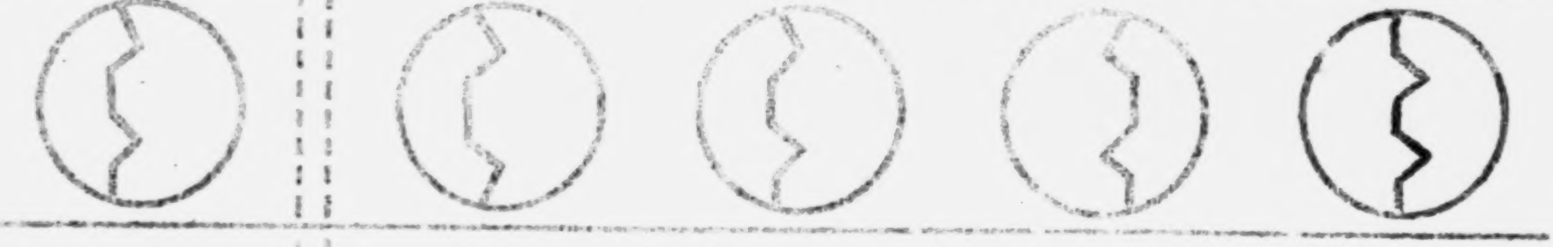


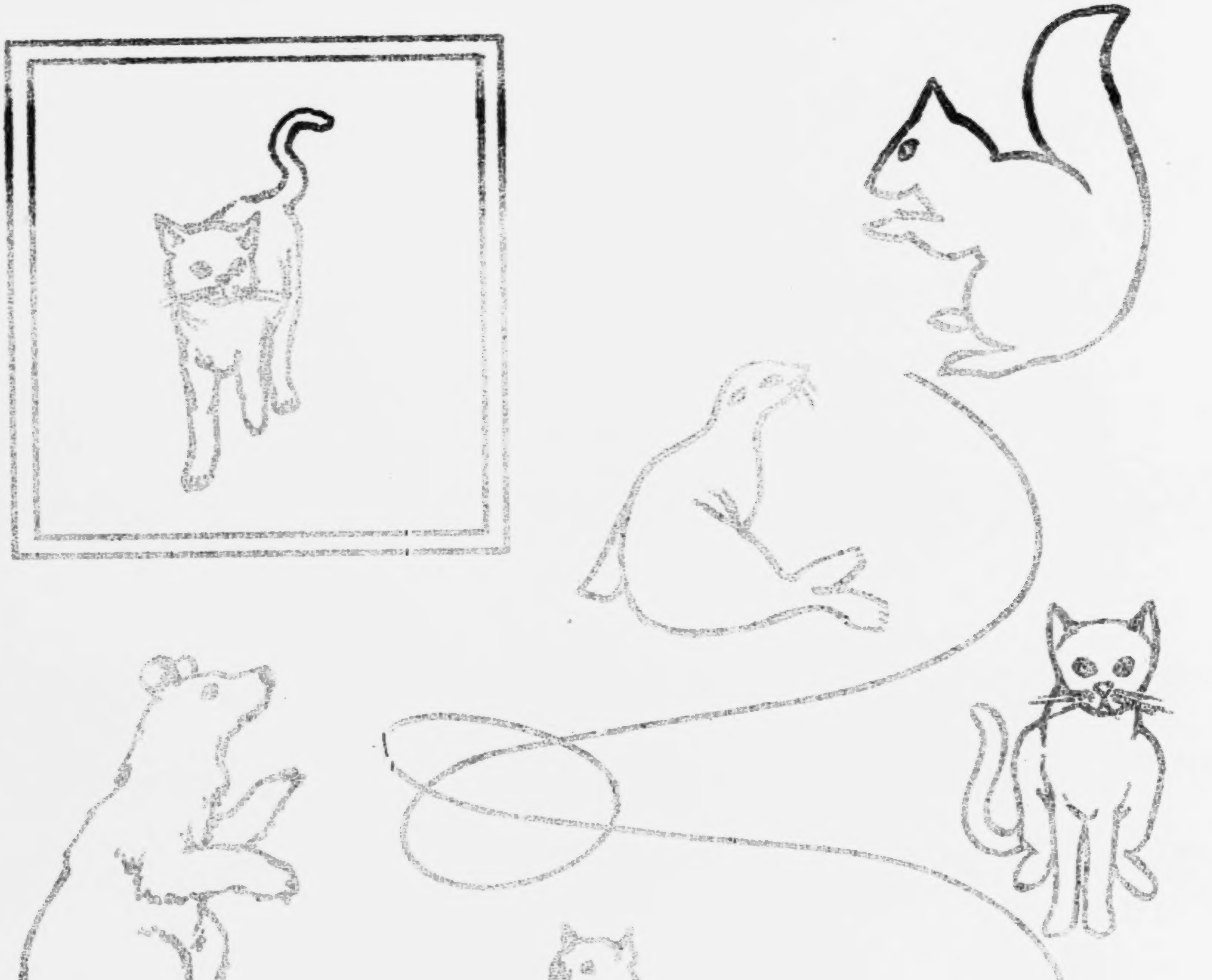












FROSTIG VISUAL PERCEPTION PROGRAM
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V D.IV

p	d	b	p
z	v	x	z
e	o	e	a
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m	n	r	m
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r	r	v	n
q	g	q	p

VISUAL DISCRIMINATION WORKSHEET

VD II

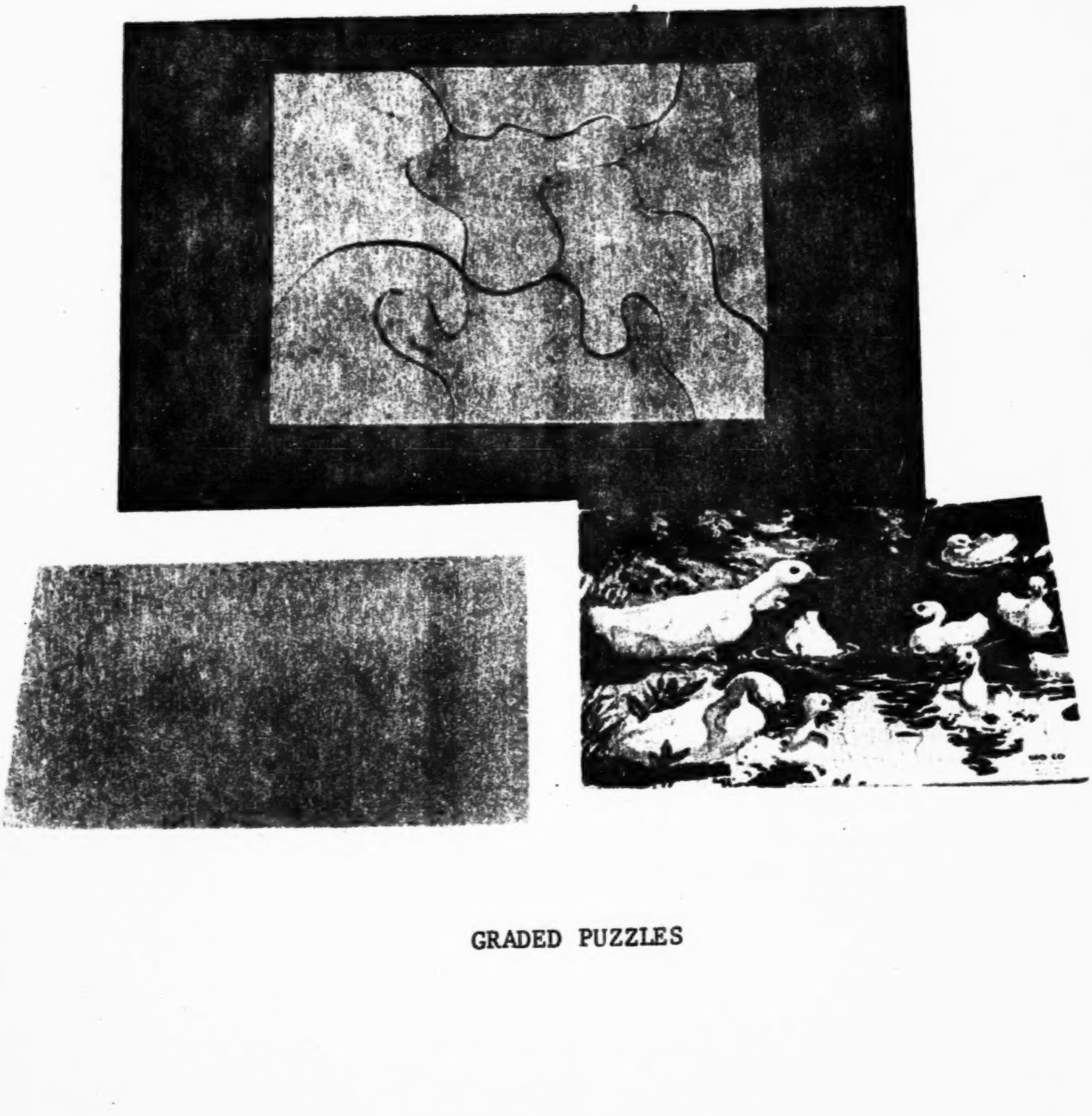
will	bill	hill	mill	will
make	make	rake	fake	cake
pan	man	tan	ran	pan
tell	sell	fell	tell	well
book	look	book	hook	took
bed	led	red	wed	bed

play	plan	play	place	plaid
work	worse	word	work	worm
stoop	stood	stool	stop	stoop
card	cork	card	carp	cart
pull	push	pulp	pull	putt
goat	good	goal	goad	goat

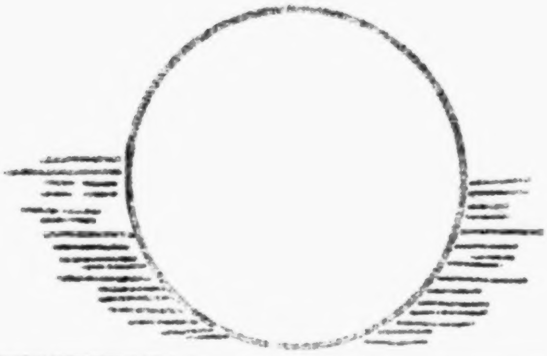
tide	tire	tide	time	tile
lost	lost	list	lest	last
head	heard	head	heed	hand
board	beard	broad	board	bread
house	horse	house	hose	hoarse
truck	track	trick	truck	tuck

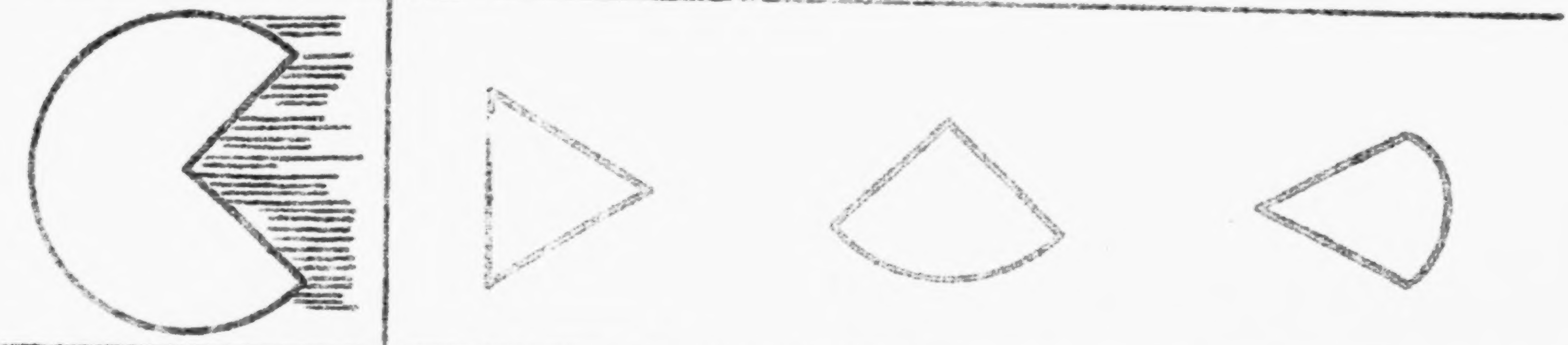
VISUAL DISCRIMINATION WORKSHEET

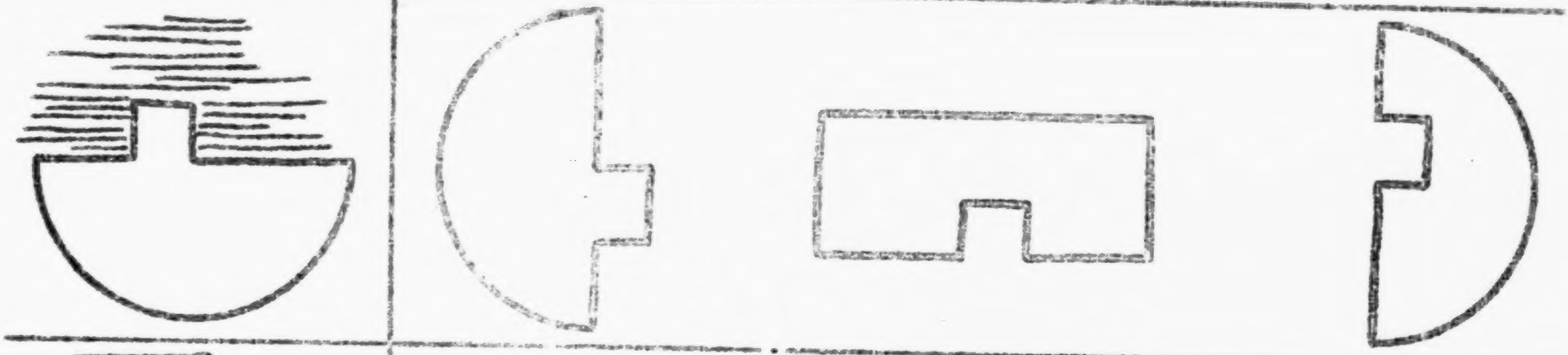
NON-VERBAL INTEGRATION

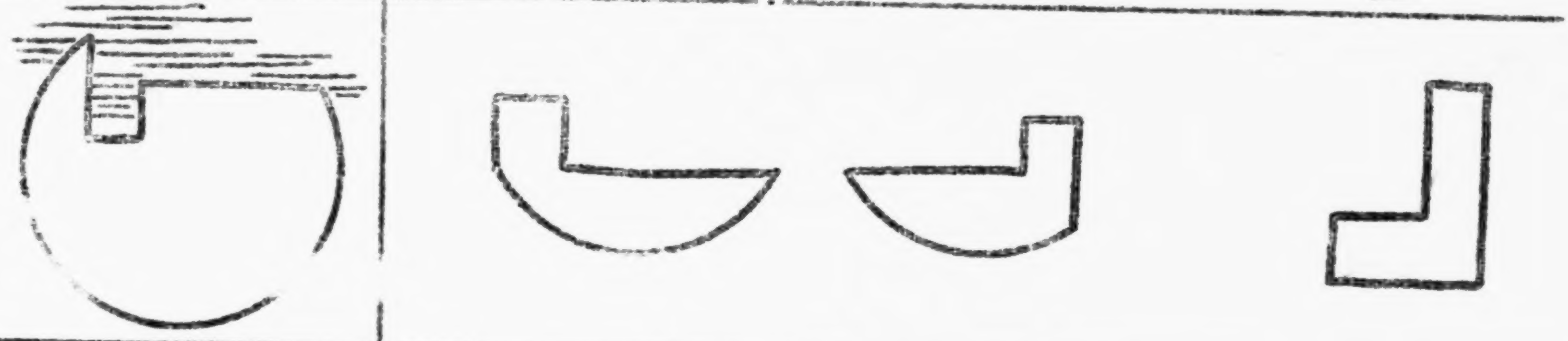


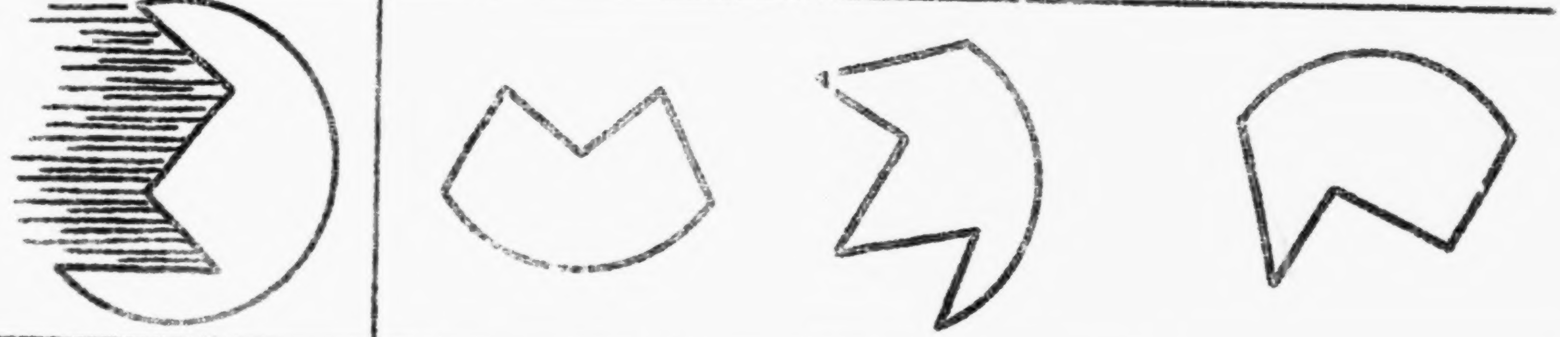
GRADED PUZZLES

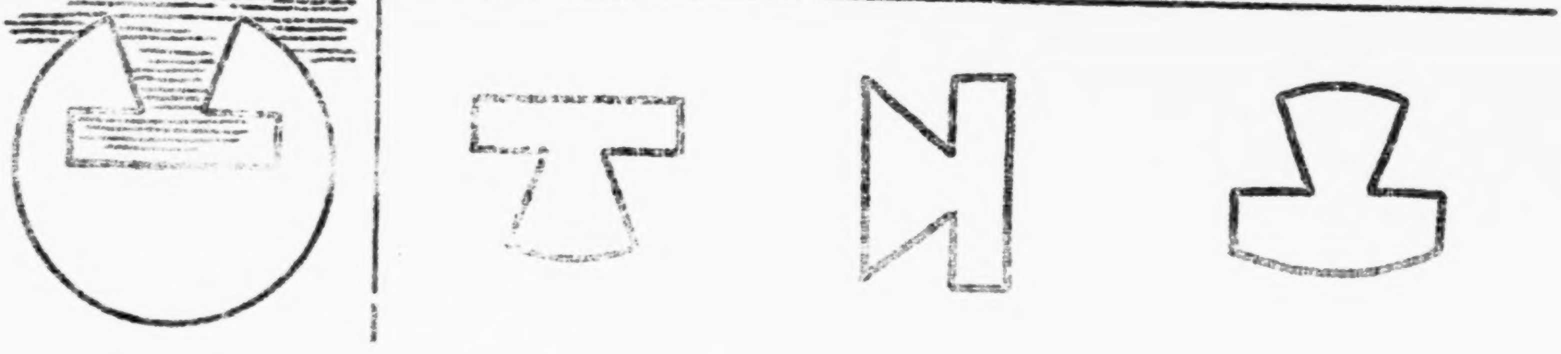












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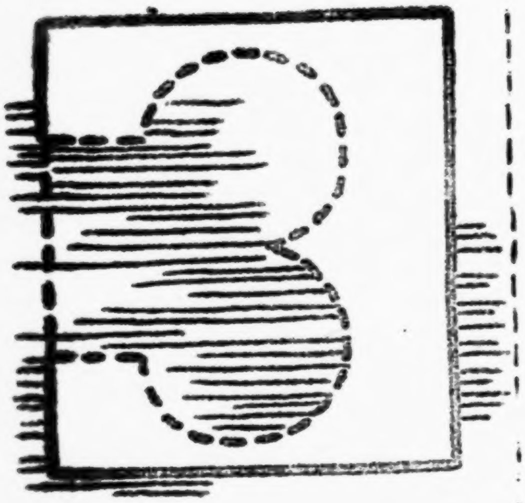
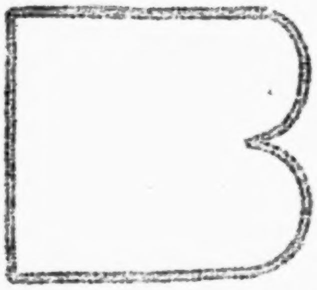
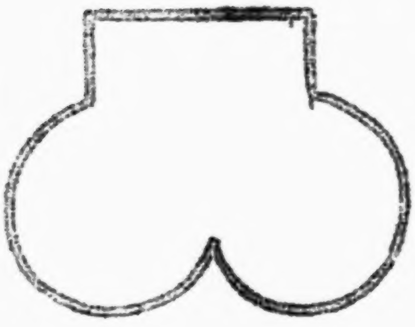
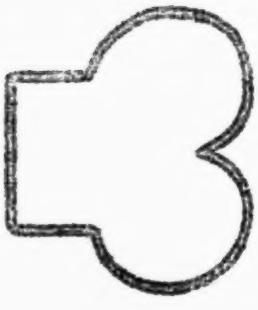
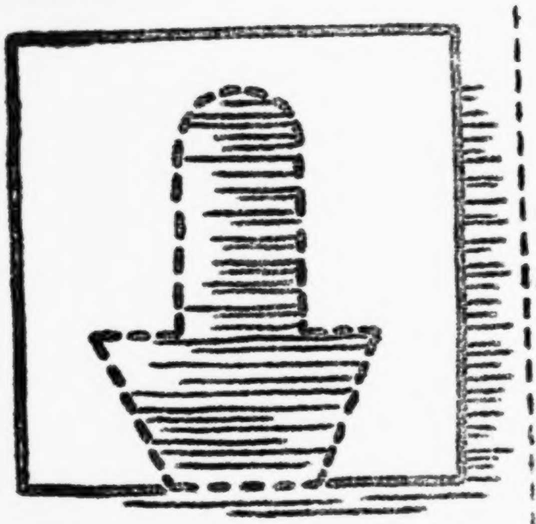
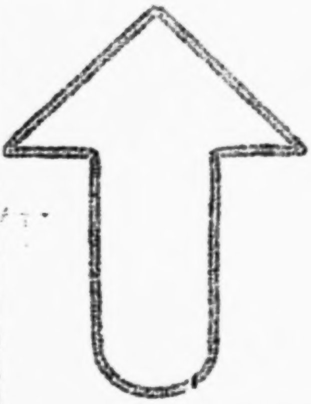
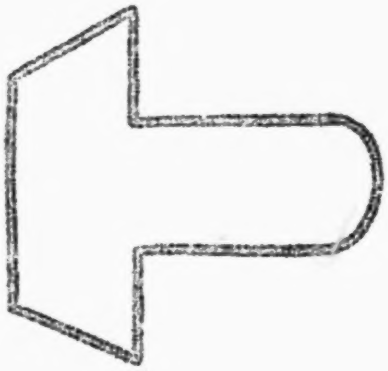
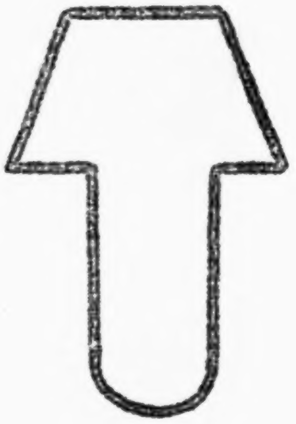
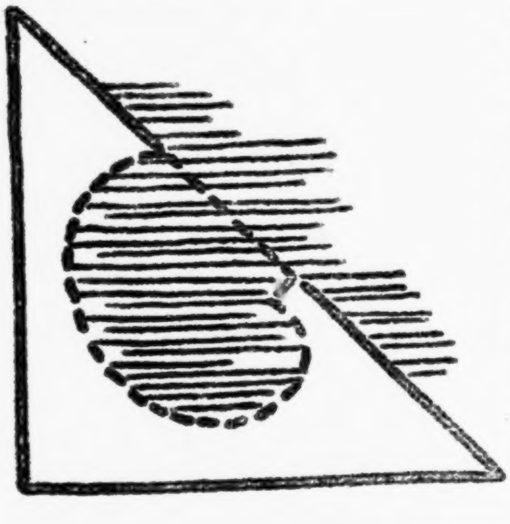
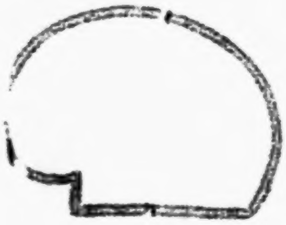
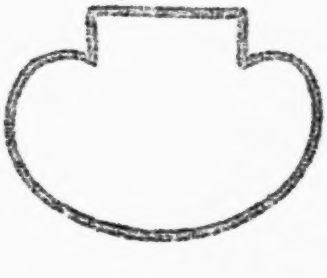
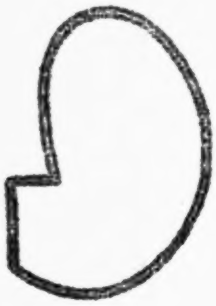
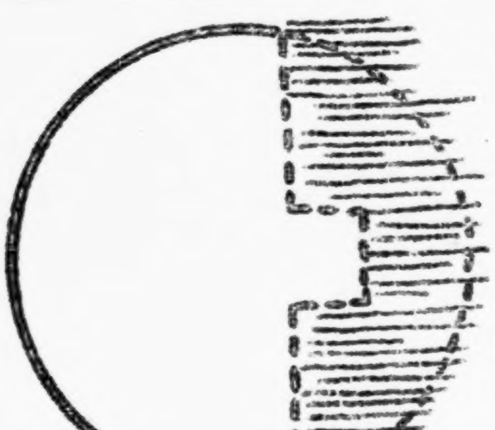
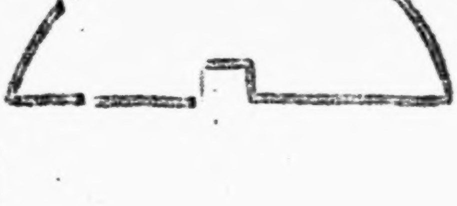
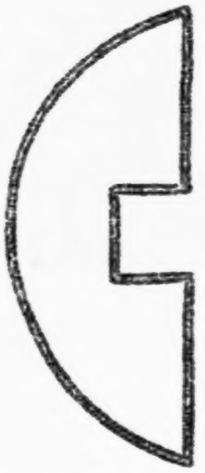
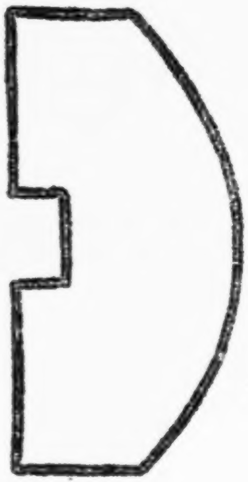
VISUAL MOTOR WORKSHEET

V M I

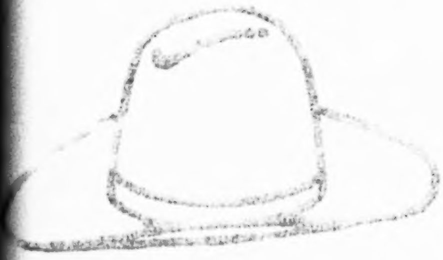





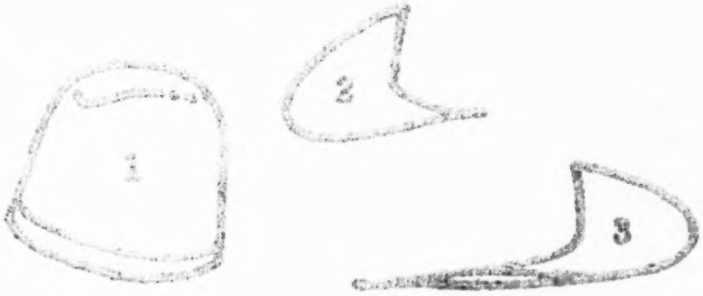





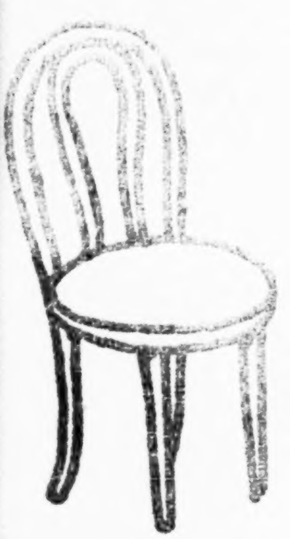





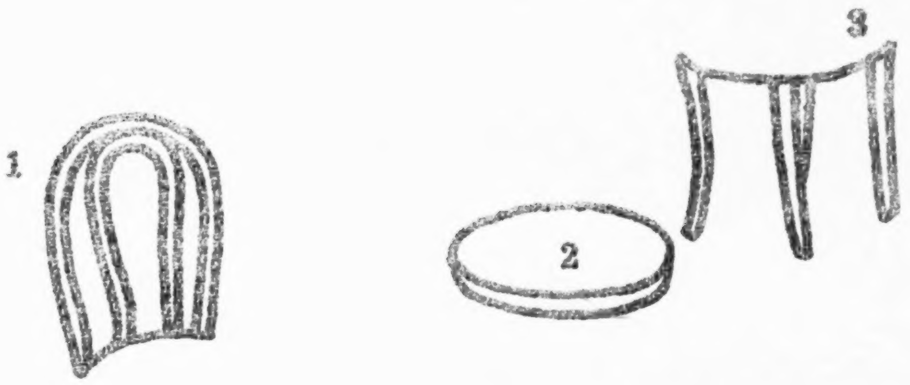
Continental Press

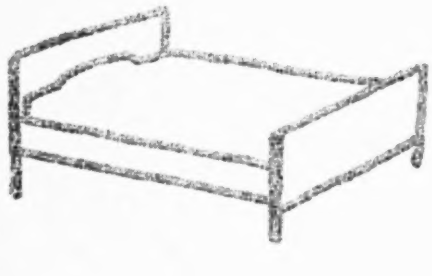
VISUAL MOTOR WORKSHEET

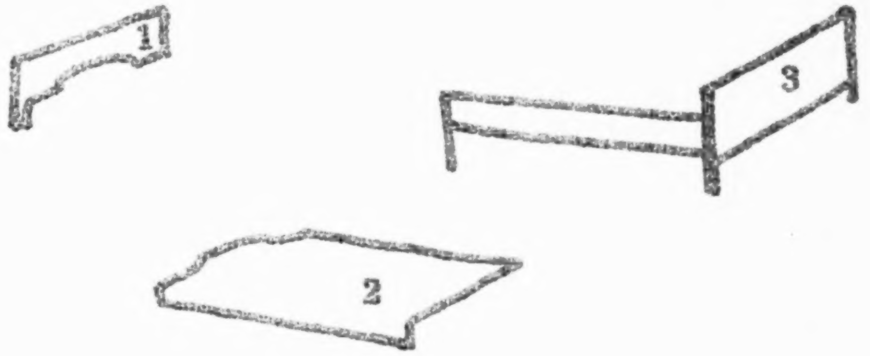


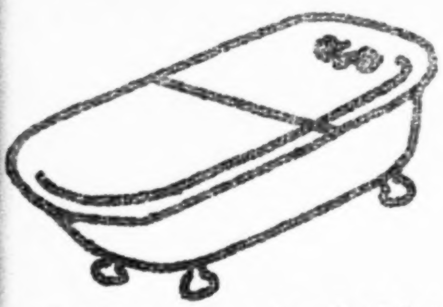


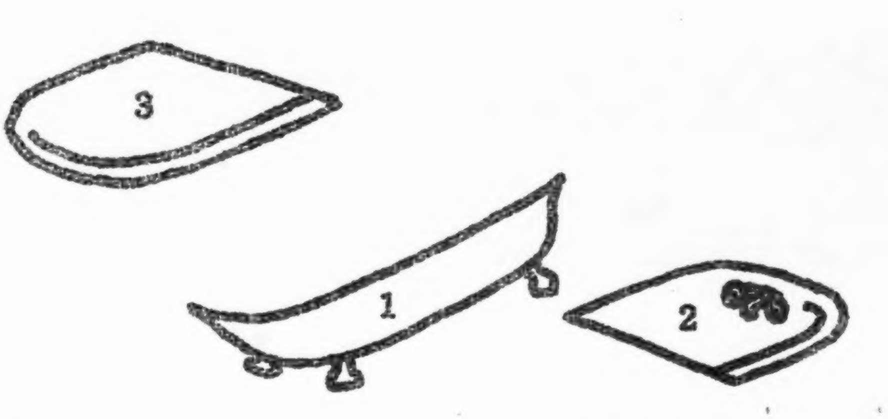












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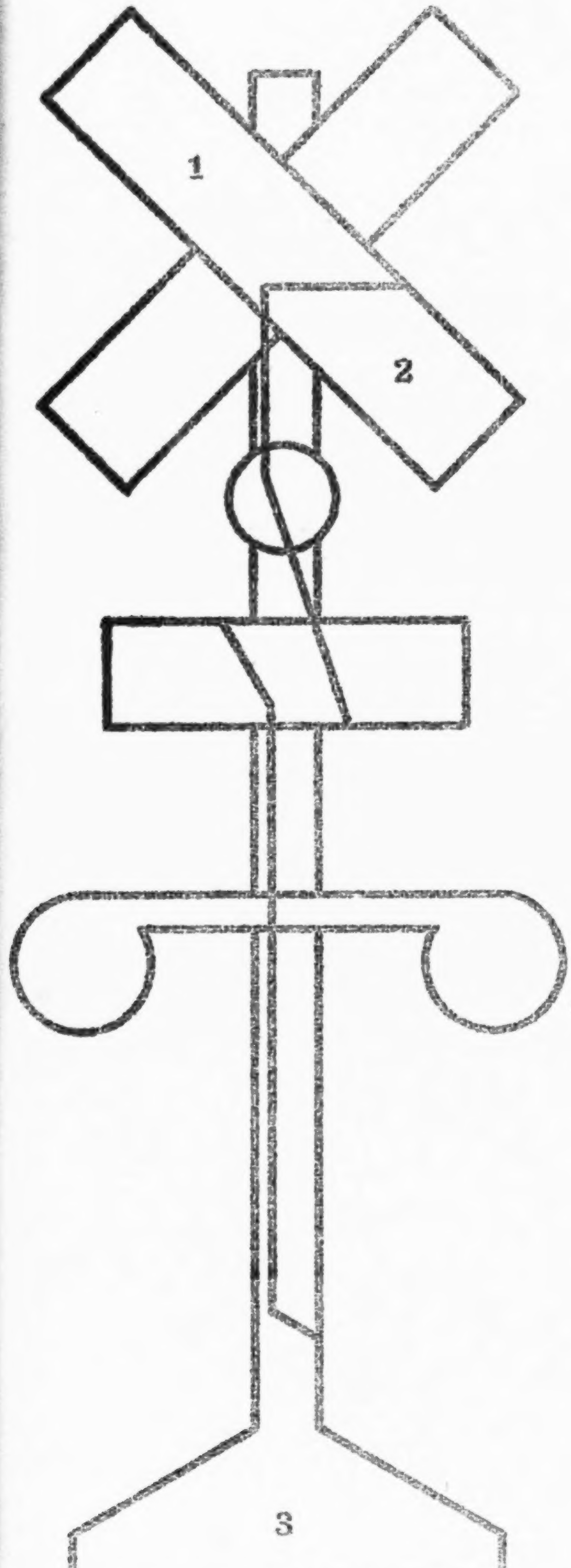

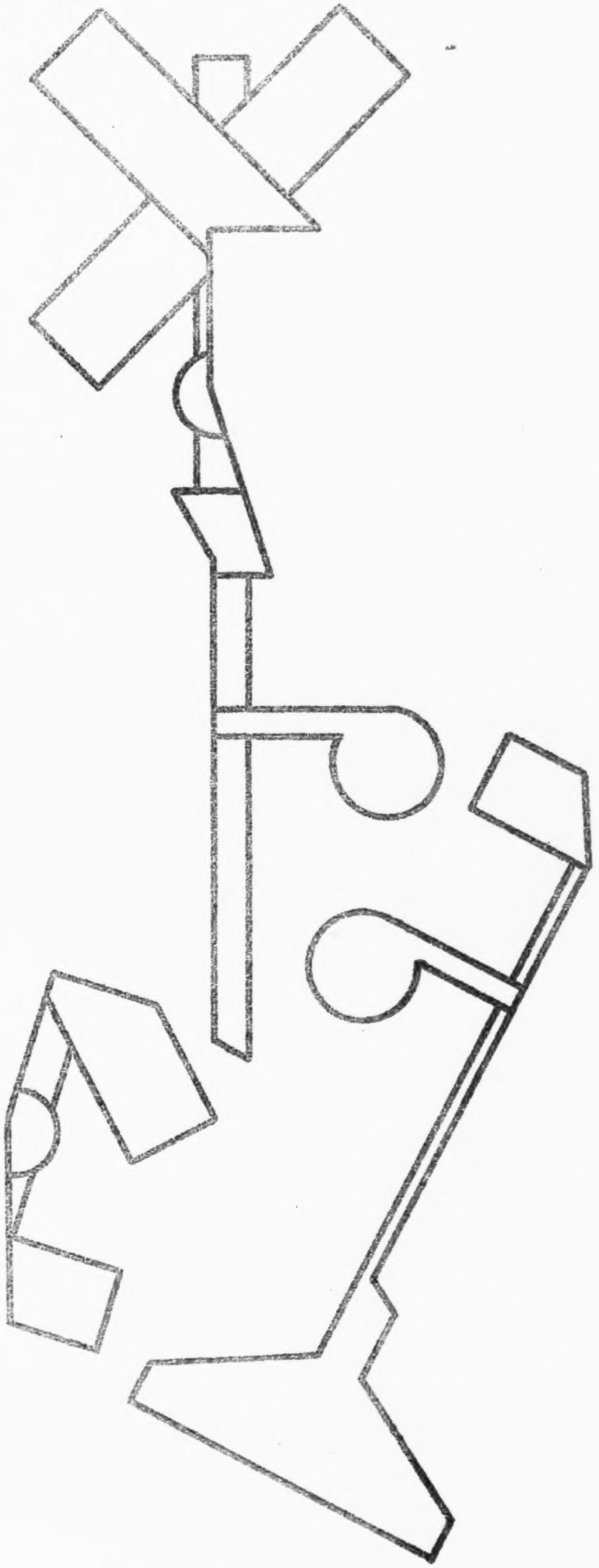

STIG VISUAL PERCEPTION PROGRAM
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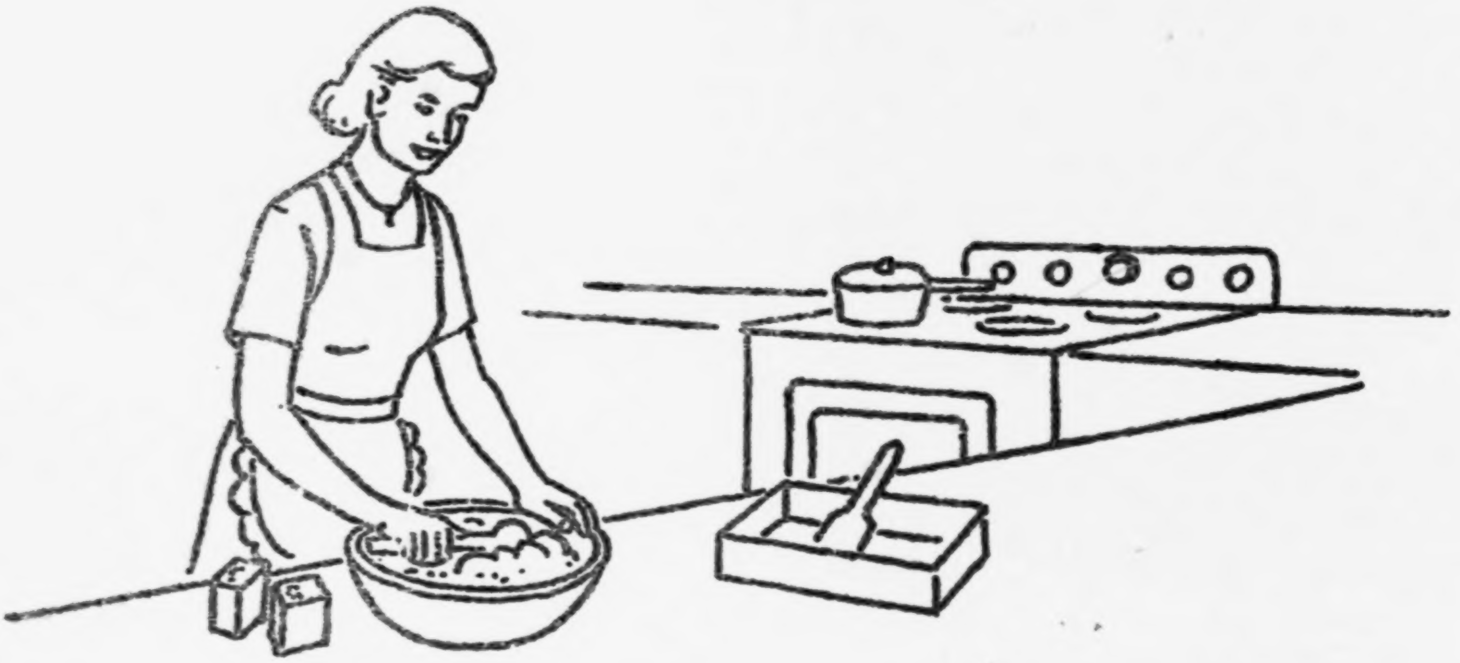
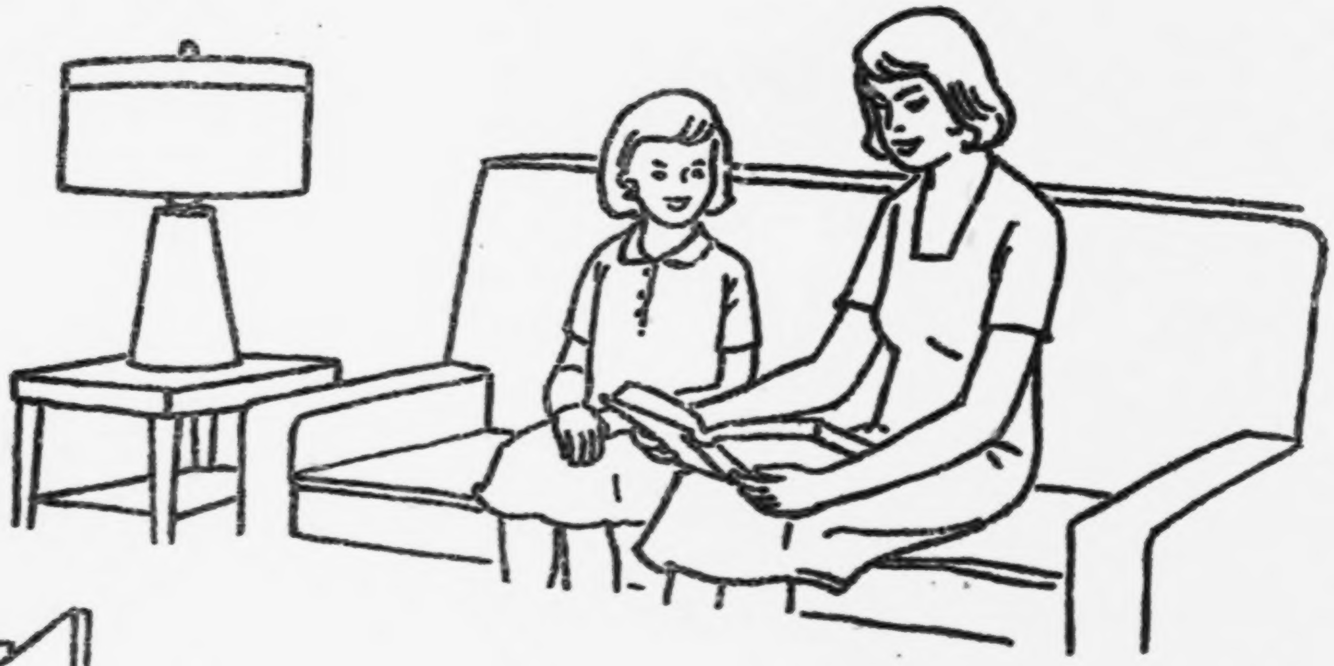
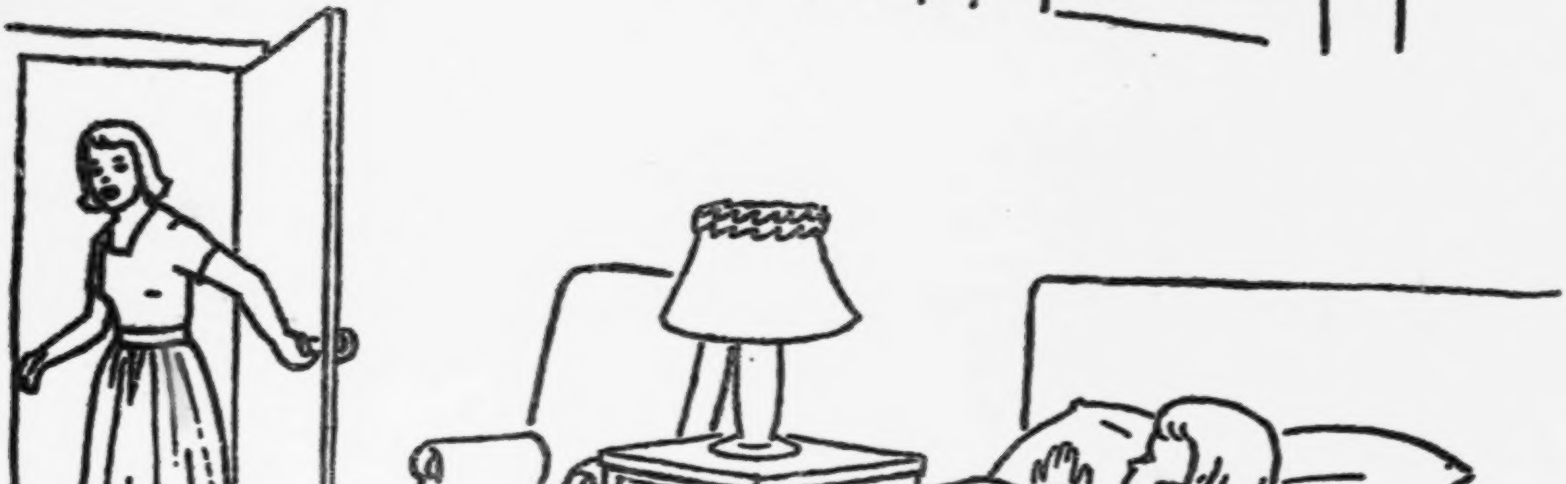
SR: Exercise 85

SYMBOLIC INTEGRATION

My Mother







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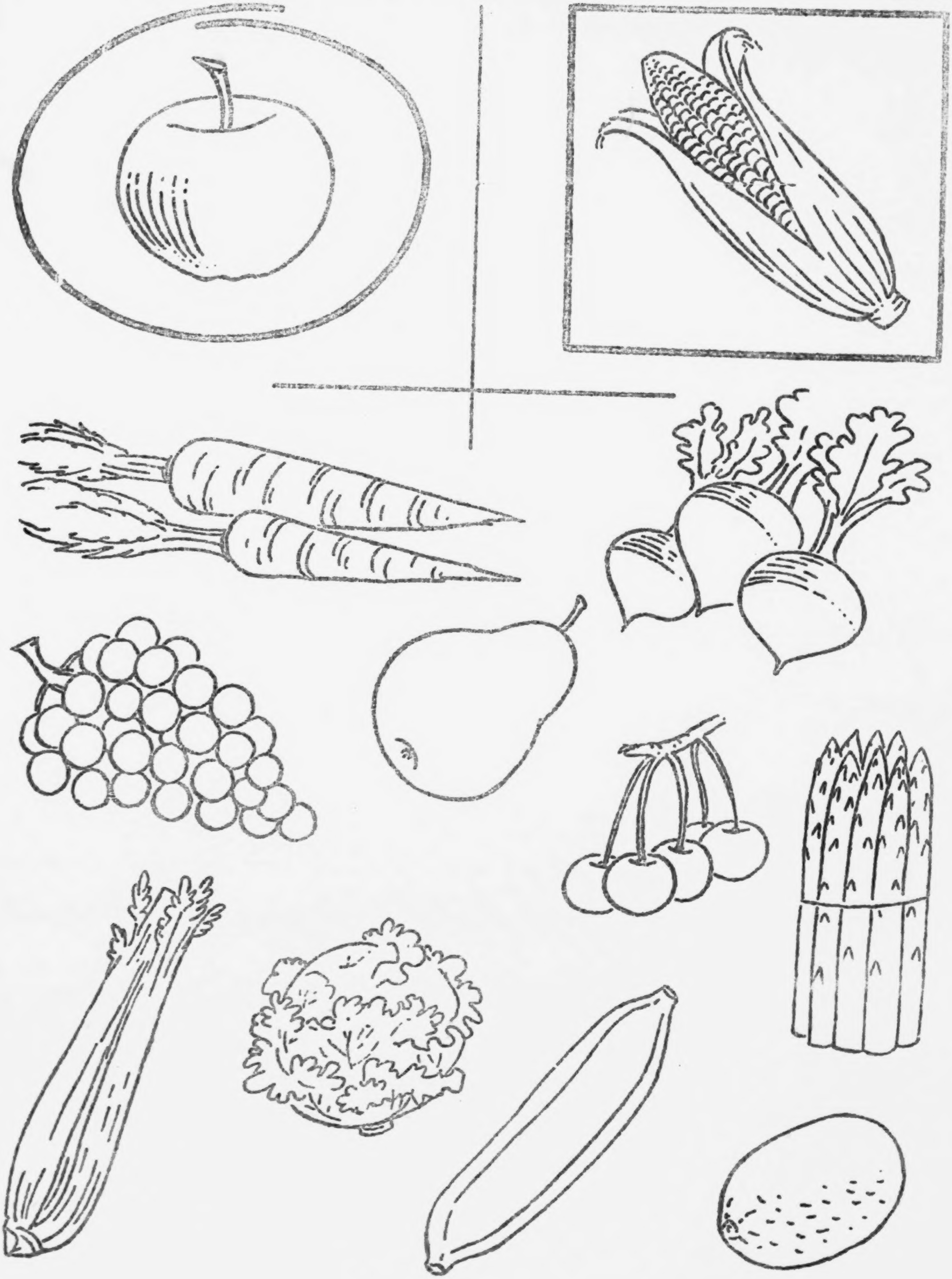
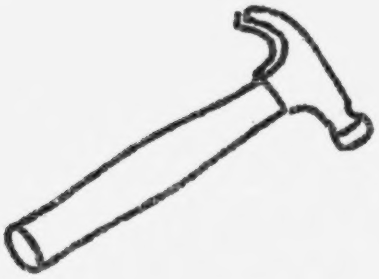
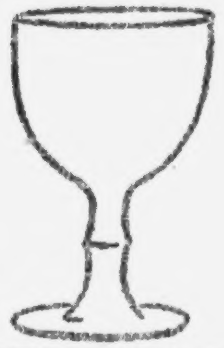
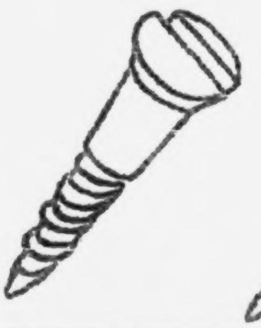
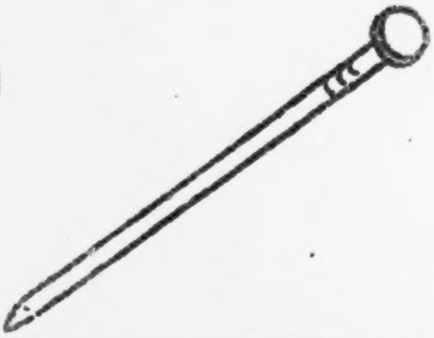
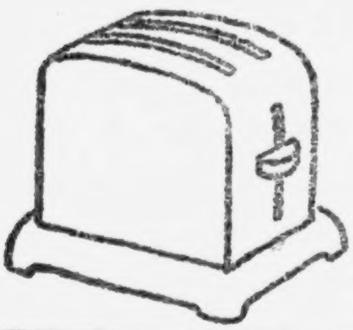
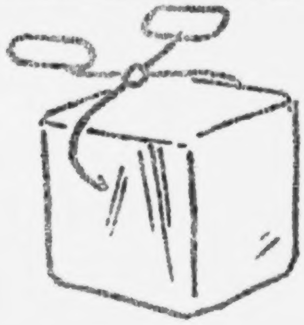
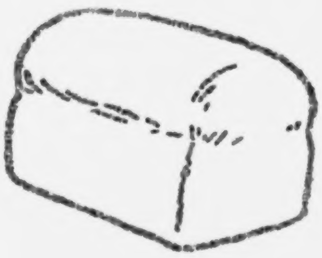
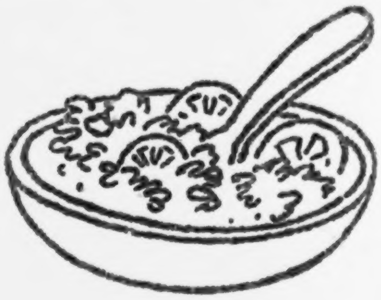
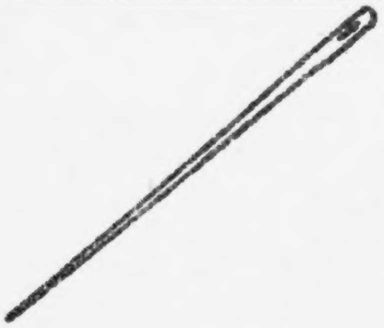
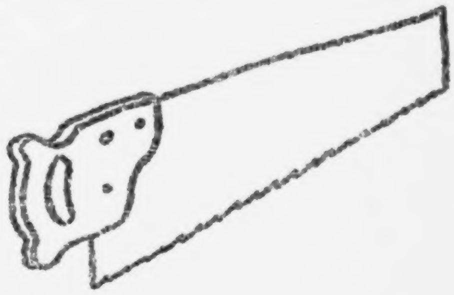
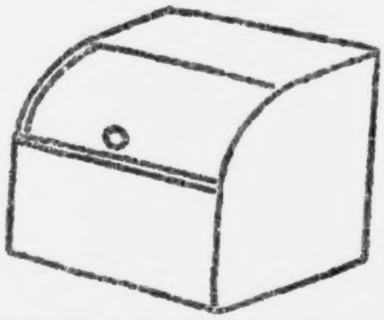
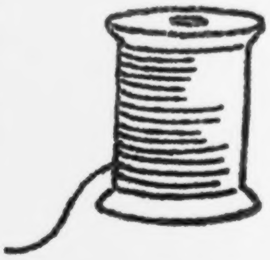
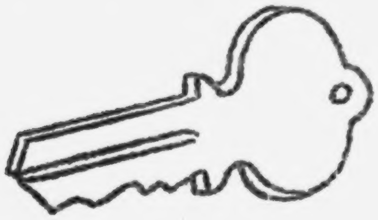
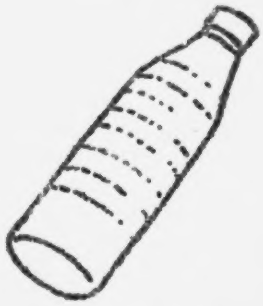
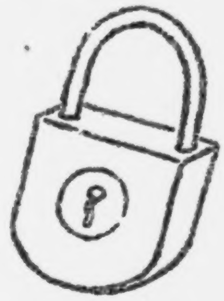
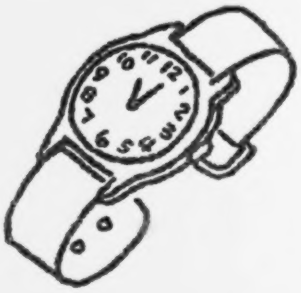
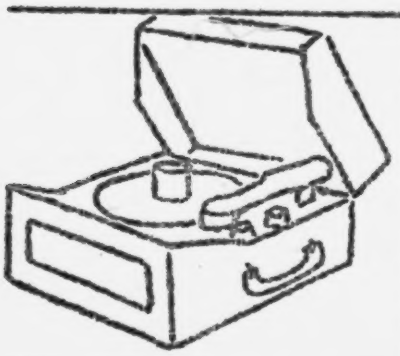
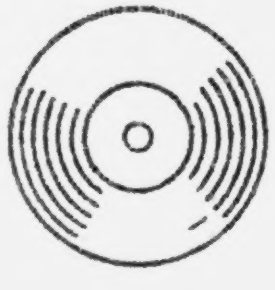
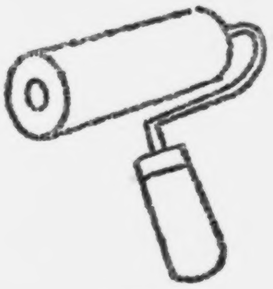
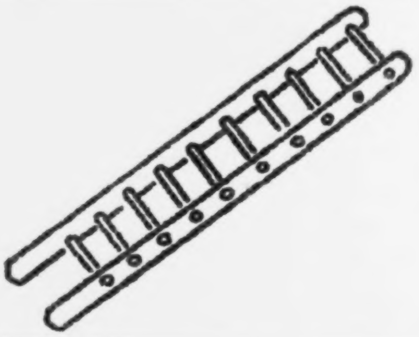
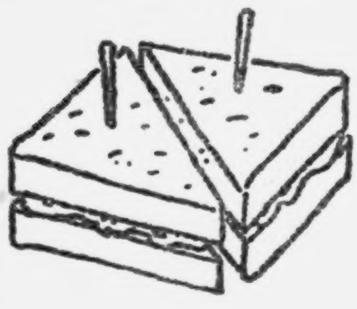
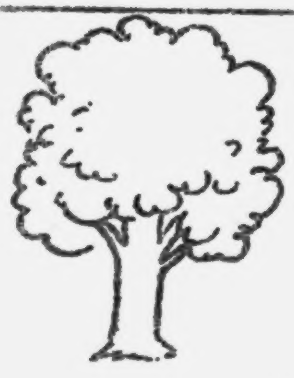
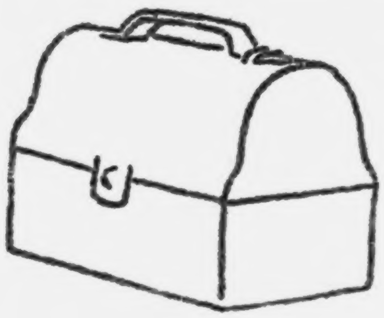
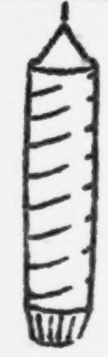


Card 4 WHO GETS IT?
Card 5 WHO GETS IT?
knife
pan
fork
glass
plate
cup
bowl
spoon
pot
PLAY HOUSE
PLAY HOUSE

EDUCATIONAL GAMES

REMEDIAL MATERIALS

PHONICS

AUDITORY DISCRIMINATION EXERCISE C

Here is the letter C. Listen to these words that begin with C:

can call cap cart cat canary

Can you think of things to eat that begin with C?

(Cake, candy, carrots, cookies)

What are some animals that begin with C?

(Camel, cat, cow, calf, canary)

Here are some words that begin with C and some that do not. Raise your hand when I say a word that does not begin with C.

cap cut nice cabinet carpet do candles

couch curtains sit cowboy catcher captain rabbit

Can you think of more words that begin with C? Name them.

Here are some sentences that you can complete with words starting with C.

1. ____________ grows on a stalk and comes on a cob.
2. I like __________.
3. We have a __________ in the living room to sit on.
4. A _____________ rides on a horse.
5. We have _______________ on the windows.

COUCH CURTAINS CORN COWBOY CANDY

READING - EXPERIENCE STORIES

My Trip to Greenfield Village

When I went to Greenfield Villag
I saw men jumps out of airplane.
Three men jumped out. One
went over the freeway. It
looked bad. He landed on southfiel
Road. I saw Henry Fords House.
There were guards all around his
House. It said no tress passing.
I had fun there. I saw a dog.
It was a dead dog there too.

By
Linda R.

June 5

The Story of the Funny Baby

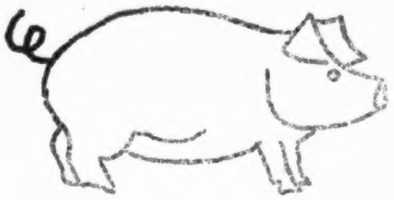
The little boy's name is Tommy. He is nine months old. Tommy is sitting on a rug. He has a big hat on, and a rattle in his hand. Tommy has a bib on, Tommy has blue pajamas on, Tommy has little red ball, Tommy has blue eyes. Tommy's finger is on his nose. One of his ears is showing and he is yawning. His mother will soon put him to bed.

The end

By
Jackie
G.

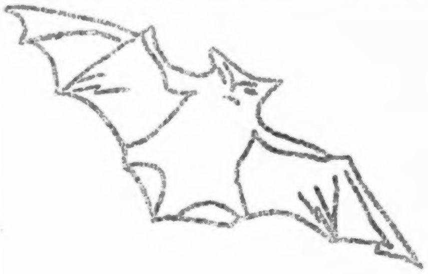
READING - WORKSHEETS

Name ______________



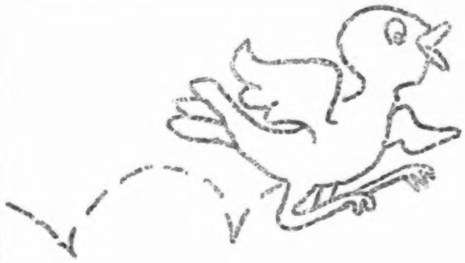
The ______ is fat.

pin
pit
pig



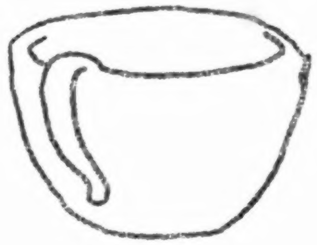
A ________ can fly.

bag
bat
bad



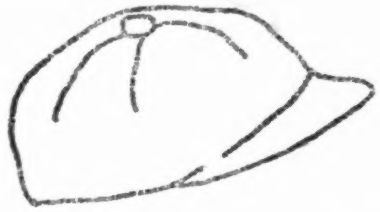
A bird can _______.

hot
hog
hop



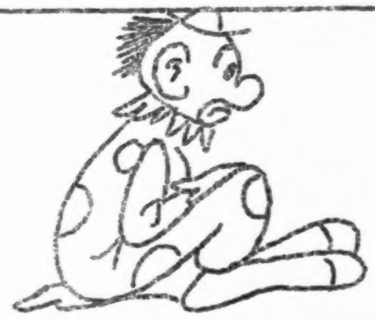
Milk is in the ______.

cup
cub
cut



My new ________ is red.

cat
can
cap



The clown has big _____.

feel
feet
feed

Make your own zoo.

CAPTURE

NAME________________________

A	B	C	D	E
		crocodile		
F	G	H	I	J
			ibex	
K	L	M	N	O
P	Q	R	S	T
U	V	W	X	Y
Z				

horse
lion
monkey
giraffe
deer

bear
fox
ibex
alligator

panther
wolf
elephant
dog

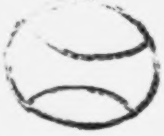
jackal
crocodile
zebra
otter

kangaroo
tiger
seal
raccoon

Underline the letter that is the same as in the box.

$\boxed{F}$	E	F	L
$\boxed{F}$	F	L	E
$\boxed{F}$	L	F	E
$\boxed{E}$	F	E	L
$\boxed{E}$	E	L	F
$\boxed{E}$	F	F	E
$\boxed{e}$	e	a	o
$\boxed{e}$	a	e	o
$\boxed{e}$	a	a	e
$\boxed{a}$	e	o	a
$\boxed{a}$	a	e	a
$\boxed{a}$	o	a	e

Look at the picture. Underline the first letter of each picture word.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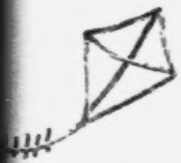
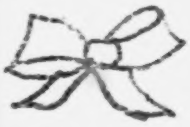
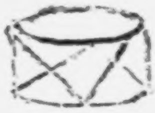
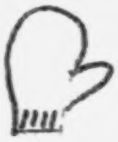

k h n g


n r m o


d b r f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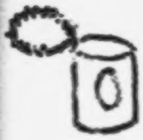
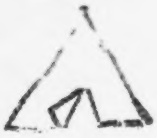

o a c d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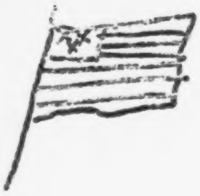
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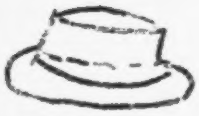
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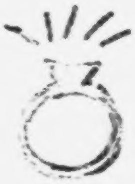
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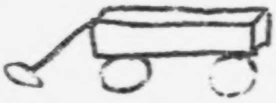
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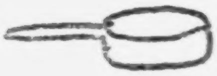
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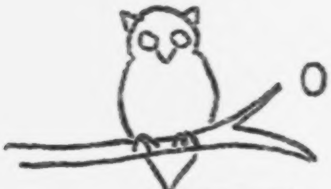
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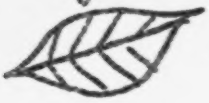
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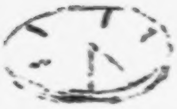
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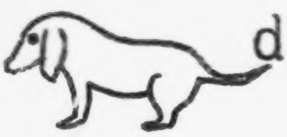
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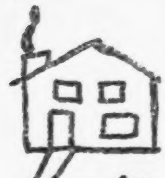
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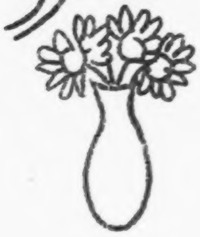
w v u l

Name ________________

Below are listed several phrases (groups of words). Look at the first phrase on the left hand side of your paper. Can you find another phrase that is the same as the first phrase, on the right hand side of your paper? Draw a line from the phrase on your left to the phrase on your right that is the same.

1. One very hot day
2. The boys and girls
3. They had money
4. They ran out
5. Their swim suits
6. old suits new suits
7. at the door
8. to the water
9. Splash splash
10. The girls and boys
10. How can I?
12. around the park
13. did not call
14. sat very still
15. did not come
16. Jack told Pete

1. They had money
2. at the door
3. to the water
4. One very hot day
5. The boys and girls
6. How can I?
7. around the park
8. They ran out
9. old suits new suits
10. Their swim suits
11. Splash splash
12. The boys and girls
13. sat very still
14. The girls and boys
15. Jack told Pete
16. did not come

APPENDIX D

WORKSHOP OUTLINES

1. Training Group

2. Remedial Group

TRAINING GROUP

Lafayette Clinic
WORKSHOP IN COGNITIVE-PERCEPTUAL-MOTOR TRAINING

OBJECTIVES: To develop understanding of the concept of cognitive-perceptual-motor dysfunction.

To develop understanding of the concepts and principles involved in cognitive-perceptual-motor training.

To develop the ability to skillfully apply methods of cognitive-perceptual-motor training and carry out such training with children.

FACULTY: Gayle R. Beck, Lela A. Llorens, O.T.R., Jean S. Braun, Ph.D. and Eli Z. Rubin, Ph.D., Lafayette Clinic Staff.

MONDAY, JANUARY 16, 1967:

8:30 a.m.	Introduction to Workshop - Mrs. Beck Mrs. Llorens	MPR
9:00 a.m.	Historical Background of Project	
10:00 a.m.	Break	
10:15 a.m.	Concept of Dysfunction, Primary and Secondary Emotional Disturbance in Children - Dr. Rubin	MPR
11:00 a.m.	Introduction to Reading List Assignments - Mrs. Llorens	MPR
12:00 noon	Lunch	
1:00 p.m.	Tour of Lafayette Clinic - Mrs. Beck	
2:00 p.m.	Reading	MPR

TUESDAY, JANUARY 17, 1967:

9:00 a.m.	Child Growth and Development - Dr. Braun	MPR
10:00 a.m.	Observe Pre-School Group - Mr. Neil Dwyer	DC
11:00 a.m.	Definition of CPM Dysfunction - Mrs. Beck	MPR
12:00 noon	Lunch	
1:00 p.m.	Relationship of CPM Dysfunction to Education - Mrs. Beck	MPR
2:00 p.m.	Reading	

WORKSHOP IN COGNITIVE-PERCEPTUAL-MOTOR TRAINING
Page 2.

WEDNESDAY, JANUARY 18, 1967:

8:30 a.m.	Discussion and Questions - Mrs. Beck Mrs. Llorens	OTA
9:30 a.m.	Observe on Children's Unit - Miss Burns	UC
10:30 a.m.	Children's Diagnostic Conference	
12:00 noon	Lunch	
1:00 p.m.	CPM Evaluation Survey - Mrs. Beck Mrs. Llorens	OTA
2:00 p.m.	CPM Training Methods - Mrs. Beck Mrs. Llorens	OTA

THURSDAY, JANUARY 19, 1967:

8:30 a.m.	CPM Training Materials and Techniques - Mrs. Beck and Mrs. Llorens	OTA
11:00 a.m.	Observe O.T. Group - Miss Bates	
12:00 noon	Lunch	
1:00 p.m.	Behavior Management - Mrs. Llorens	OTA
2:00 p.m.	Reading	

FRIDAY, JANUARY 20, 1967:

9:00 a.m.	Observe Primary Group - Mr. Beall	UC
10:00 a.m.	Observe Pre-School Group	DC
11:00 a.m.	Discussion	MPR
12:00 noon	Lunch	
1:00-3:00	Reading	MPR

MPR = Multipurpose Room

OTA = O.T. Activity Room

UC = Upstairs Classroom

DC = Downstairs Classroom

LAFAYETTE CLINIC WORKSHOP

Monday, January 23, 1967

8:00	Review Rounds, Children's Service
9:30	Introduction to Program Planning and Problem Solving
12:00	Lunch
1:00	Reading
2:00	Discussion and Questions

Tuesday, January 24, 1967

9:00	Reading
10:00	Observe Pre-school Group, Mr. Neil Dwyer
11:00	Observe Basic Skills O.T. Group, Miss Bates
12:00	Lunch
1:00	Program Planning
2:00	Program Planning

Wednesday, January 25, 1967

8:30	Program Planning
	Reading
10:30	Children's Diagnostic Conference
12:00	Lunch
1:00	Program Materials
2:00	Program Materials

Thursday, January 26, 1967

9:00-12:00	Free Time, Reading, Planning
12:00	Lunch
1:00-3:00	Free Time, Reading, Planning

Friday, January 27, 1967

9:00	Observe Primary Group
10:00	Observe Pre-school Group
11:00	Observe O.T. Group
12:00	Lunch
1:00	Training Group
2:00	Training Group

Lafayette Clinic

WORKSHOP IN COGNITIVE-PERCEPTUAL-MOTOR TRAINING

MONDAY, January 30, 1967:

8:00	Review Rounds
9:00	Review program plans and materials for training groups
10:30-12:00	Free time for use in preparation or reading as needed
12:00	Lunch
1:30	Training Groups
2:15	Training Groups

TUESDAY, January 31, 1967:

9:00-12:00	Preparation and Reading
12:00	Lunch
1:30	Training Groups
2:15	Training Groups

WEDNESDAY, February 1, 1967:

8:00	Children's Progress Conference
9:00	Free
10:30	Children's Diagnostic Conference
12:00	Lunch
1:00	Discussion of Cases
2:00	Free

THURSDAY, February 2, 1967:

9:00-12:00	Planning, preparation and reading
12:00	Lunch
1:30	Training Groups
2:15	Training Groups

FRIDAY, February 3, 1967:

9:00-12:00	Planning, preparation and reading
12:00	Lunch
1:30	Training Groups
2:15	Training Groups

Lafayette Clinic

WORKSHOP IN COGNITIVE-PERCEPTUAL-MOTOR TRAINING

MONDAY, February 6, 1967:

8:00	Children's Review Rounds
9:00-12:00	Program planning for Clinic training groups for the week
12:00	Lunch
1:30-3:00	Training Groups

TUESDAY, February 7, 1967:

9:00	Begin planning for Roseville training groups
	Lesson plans
9:30-12:00	Planning and preparation
12:00	Lunch
1:30-3:00	Training groups

WEDNESDAY, February 8, 1967:

9:00	Planning and preparation
10:30-12:00	Children's Diagnostic Conference
12:00	Lunch
1:00	Discussion of Training Cases
2:00	Planning and preparation

THURSDAY, February 9, 1967:

9:00-12:00	Planning and preparation
12:00	Lunch
1:30-3:00	Preparation and planning

FRIDAY, February 10, 1967:

9:00-11:00	Preparation and planning
11:00	Discussion and Questions Dr. Rubin and Dr. Braun
12:00	Lunch
1:30-3:00	Terminate Training Groups

Lafayette Clinic

WORKSHOP IN COGNITIVE-PERCEPTUAL-MOTOR TRAINING

PROBLEM SOLVING PROCEDURE

Training Group I	Training Group II
Wayne	James
Tina	Arthur
David O.	Joellen

PROCEDURE

1. Read the following records to gather the necessary information on each child:
    a. Clinic Case record
    b. Occupational Therapy record
    c. Special Education record

2. Record problem behavior to be dealt with in training sessions.

3. Record academic achievement level and degree of acceleration or retardation.

4. Record (on form) areas and degree of dysfunction.

5. Record areas of training and techniques to be used in each area.

Lafayette Clinic

WORKSHOP IN COGNITIVE-PERCEPTUAL-MOTOR TRAINING

READING LIST

Textbook - The Emotionally Handicapped Child and the Elementary School, Rubin, Simson and Betwee.

Required reading in Textbook: Part I - Chap. 1, p. 23; Chap. 2, p. 34; Part II - Chap. 4, p. 74; Part III - Chap. 6, p. 133.

Rubin, Eli Z. "The Impact of Cognitive-Motor Dysfunction on the Development of Adaptive Behavior." Mimeo reprint.

Beck, Gayle R., et al, "Educational Aspects of Cognitive-Perceptual-Motor Deficits in Emotionally Disturbed Children." Reprint.

Llorens, Lela A., et al, "Training in Cognitive-Perceptual-Motor Functions: A Preliminary Report." Reprint.

Frostig, Marianne and Horne, David, The Frostig Program for the Development of Visual Perception.

Oppenheimer, Jess, "All About Me," mimeograph reprint.

Getman, G. N., How to Develop Your Child's Intelligence.

Kephart, Newell, Slow Learner in the Classroom.

Wohl, Arthur, "A Program for the Development of Postural Balance in Athletes." Xerox copy.

Peter, Lawrence J., Prescriptive Teaching.

Other mimeographed material as indicated.

Lafayette Clinic

WORKSHOP IN COGNITIVE-PERCEPTUAL-MOTOR TRAINING

SUPPLEMENTARY READING MATERIALS

Exceptional Children, December, 1964
"Learning Disabilities - Yesterday, Today and Tomorrow," Barbara Bateman.

Learning Disorders, Vol. 1.

Learning Disorders, Vol. 2.

A Perceptual Testing and Training Handbook for First Grade Teachers, Florence E Sutphin.

Perceptual-Motor Dysfunction in Children, A. Jean Ayres.

Cruickshank, William, et al. _A Teaching Method for Brain-injured and Hyperactive Children_.

REMEDIAL GROUP

Lafayette Clinic
WORKSHOP IN REMEDIAL READING: TECHNIQUES, PROCEDURES, AND BEHAVIOR MANAGEMENT

OBJECTIVES: To develop a better understanding and insight into the nature of reading problems and the teaching of reading.

To develop the ability to skillfully apply methods and specific approaches and techniques to the teaching of reading.

To develop instructional material to implement the teaching of remedial reading.

To develop the ability to deal effectively with classroom behavior.

FACULTY: Charles D. Beall, Eli Z. Rubin, Ph.D., Clyde B. Simson, M.D., David Shantz, Ph.D., Lela A. Llorens, OTR, Lafayette Clinic Staff

MONDAY, February 6, 1967:

8:30 a.m.	Project Overview	Dr. Rubin
9:15 a.m.	Tour of Lafayette Clinic	Mr. Fleming
11:00 a.m.	Introduction to Reading List Assignments	Mr. Beall
12:00 noon	Lunch	
1:00 p.m.	Special Education Class for Emotionally Disturbed Children in Public Schools	Dr. Simson
2:00 p.m.	Reading - Library - Mr. Beall's Classroom	

TUESDAY, February 7, 1967:

8:00 a.m.	Free	
9:00 a.m.	Observe Children's O.T. Advanced Group	
10:00 a.m.	Understanding Children's Behavior	Dr. Shantz
11:00 a.m.	Observe Upper Elementary Group	Mr. Beall
12:00 noon	Lunch	
1:00 p.m.	Developing Instructional Materials Stencils	Mr. Beall's Classroom
2:00 p.m.	Reading - Library	

Lafayette Clinic

WORKSHOP IN REMEDIAL READING: TECHNIQUES, PROCEDURES, AND BEHAVIOR MANAGEMENT

Page 2.

WEDNESDAY, February 8, 1967:

8:15 a.m.	Office Machines	Mr. Beall
9:00 a.m.	Developing Instructional Materials	Mr. Beall's Classroom
10:30 a.m.	Children's Diagnostic Conference	Children's Dining Room
12:00 noon	Lunch	
1:00 p.m.	Testing Procedures	Mr. Beall
2:00 p.m.	Reading, Instructional Material	

THURSDAY, February 9, 1967:

8:30 a.m.	Discussion and Questions	Mr. Beall
9:15 a.m.	Review Records-Emphasis Grouping Procedures	
11:00 a.m.	Observe Children's Ward	Miss Burns
12:00 noon	Lunch	
1:00 p.m.	Behavior Management	Mrs. Llorens
2:00 p.m.	Developing Instructional Material	

FRIDAY, February 10, 1967:

8:00 a.m.	Free	
9:00-12:00am	Planning, Instructional Materials, Reading	
12:00 noon	Lunch	
1:00 p.m.	Planning, Preparation, Instructional Material	
2:30 p.m.	Discussion and Review Week's Activities	Mr. Beall

Lafayette Clinic

WORKSHOP IN REMEDIAL READING: TECHNIQUES, PROCEDURES, AND BEHAVIOR MANAGEMENT

MONDAY, February 13, 1967:

8:00	Review Rounds	
9:00-12:00	Reading, Preparation, Instructional Material	
12:00	Lunch	
1:00	Planning, Demonstration and Discussion of Case to be used	
2:00	Preparation Instructional Material	

TUESDAY, February 14, 1967:

9:00-12:00	Preparation Instructional Material	
12:00	Lunch	
1:00	Demonstration: Word Learning Visual Auditory and Visual Auditory Kinesthetic Tactile Techniques	Mrs. Benson
2:00	Review Demonstration	

WEDNESDAY, February 15, 1967:

8:00	Progress Conference	Children's Dining Area
9:00	Preparation Instructional Material	
10:30	Diagnostic Conference	Children's Dining Area
12:00	Lunch	
1:00	Review Cases - Grouping Procedures	
2:00	Reading, Preparation Instructional Material	

THURSDAY, February 16, 1967:

8:00	Free	
9:00	Demonstration: Directed Reading Activity	Mr. Beall
10:00-12:00	Reading Preparation Instructional Material	
12:00	Lunch	
1:00	Testing Procedures	Mr. Beall
2:00	Reading, Preparation Instructional Material	

FRIDAY, February 17, 1967:

8:00	Free	
9:00	Demonstration: Orton-Gillingham Technique to Word Learning	Mrs. Benson
10:00	Planning Preparation	
11:00	Demonstration: Directed Reading Activity	Mrs. Benson
12:00	Lunch	
1:00-3:00	Discussion, planning	

APPENDIX E

COPIES OF RECORDING FORMS

1. Face Sheet
2. Individual Profile - Training Group
3. Individual Lesson Plan - Training Group
4. Review of Progress - Training Group
5. Review of Progress - Remedial Group
6. Progress Report Form

NAME____________________ AGE__________ SEX__________ DATE OF BIRTH__________ CURRENT GRADE__________

SCHOOL NAME____________________ TEACHER____________________

- -

TEST RESULTS:

1. METROPOLITAN ACHIEVEMENT TEST SCORES (FORM)

		W.K.	W.D.	READ.	SPELL.	ARITH.	AV.GR.EQ.
A.	GRADE ACH.	______	______	______	______	______	______
	DISC.(1966)	______	______	______	______	______	______
B.	GRADE ACH.	______	______	______	______	______	______
	DISC.(1967)	______	______	______	______	______	______

2. W I S C VERBAL__________ PERFORMANCE__________ FULL SCALE__________

3. BEHAVIOR SYMPTOMS

B C L FACTORS: TYPE: __________ TYPE: __________ TYPE: __________

4. LIST OF COGNITIVE-PERCEPTUAL-MOTOR SCORES:

I-A __________
I-B __________
I-D __________
I-E __________

II-A __________
II-B __________

III-A __________
III-C __________
III-E __________

IV-A __________
IV-B __________
IV-D __________

V-C __________
V-D __________
V-E __________

VI-A __________

VII __________

VIII-A __________

IX-E __________
IX-F __________

Frostig I __________
Frostig II __________
Frostig III __________
Frostig IV __________

Bender __________

Raven % __________

ITPA (28) __________
ITPA (29) __________

COGNITIVE-MOTOR DYSFUNCTION SCORE:______________

AGE ____________________

I.Q. ____________

F.S. I.Q. ____________

	PERCEPTION								MOTOR		MEMORY				ORIENTATION			INTEG.			LING.	
	TAC. KIN.		VISUAL				AUDITORY				IMMED. ROTE		MEANING									
	SIMP.	COMP.	FORM	SIZE	SPACE	CON.	DISC.	CON.	FINE	GR.	AUD.	VIS.	IMM.	DEL.	TIME	SPACE	SIZE	NON VER.	SYM.	INF.	IN	OUT
A D																						
A P																						
S D																						
M D																						

C - P - M TRAINING GROUP
INDIVIDUAL LESSON PLAN

CHILD'S NAME:________________________DATE:________________

AGE:__________SEX:__________TEACHERS:________________

____

AREAS OF DYSFUNCTION	RATING (Somewhat Deficient - SD) (Markedly Deficient - MD)	ACTIVITIES	APPROACH (Individual - I) (Group - G)

m

Planned sequence for training:____________________

Observations of child in CPM classroom:____________________

COMMENTS:____________________

C - P - M TRAINING GROUP
REVIEW OF PROGRESS

ILD'S NAME:______________________________ AGE:__________ SEX:__________

	Tactile-Kines.		Visual Perc.		Motor		Orientation		Integ.
	Simp.	Comp.	Form	Cons.	Fine	Gross	Space	Size	Non-Verb.
reas of Dysfunction									
eas of Dysf. overed in aining									
evel Reached									

AVIOR OBSERVATIONS:______________________________

MENTS:______________________________

REMEDIAL CLASS
REVIEW OF PROGRESS

ILD'S NAME:____________________ AGE:____________ SEX:__________

ESENT GRADE PLACEMENT:______________

READING LEVELS

GRADE	Independent Level	Instructional Level	Frustration Level

PPROACHES USED	VAK	VAKT	PHONICS	EXPERIENCE STORY
	BASAL READER		STORY TELLING	MODIFIED WORDS IN COLOR

HER:

HAVIOR OBSERVATIONS:______________________________

MMENTS: (Pupils response to __________ method: Progress, lack of progress;

mplications)______________________________

PROGRESS REPORT FORM

Date	Observations and Comments

APPENDIX F

1. Teacher's Rating Scale

2. Outline and Scales for Home Interview

ASE RETURN THIS RATING GUIDE
NG WITH YOUR COMPLETED REPORTS.

RATING GUIDE

for Teacher's Rating Scales

INSTRUCTIONS:

1. You are asked to fill in one set of rating scales for each child in your class who is in this study.

2. Before you start rating, please familiarize yourself with the full description of the rating scales. You will find it in this Rating Guide, following the instructions you are now reading. The title of each scale is meant merely to give a rough indication of the nature of the scale. Only a careful reading of the whole description of a given scale will reveal in detail on what kinds of behavior, or what personal characteristics, we ask you to rate the child.

3. For each scale you have a choice of rating a child as 1, 3, 5, 7, or 9. (You may use 2, 4, 6, and 8 if you feel you need more in-between values.) In the description of each scale we have indicated when a child should be rated as 1, 5, or 9. (Sometimes the meaning of 3 and 7 is also spelled out; in other cases it follows from the context.)

4. Please use the small square provided for each scale to mark your rating of the child.

5. Please rate each child according to his usual behavior in the field covered by each particular scale, always considering the last four weeks just preceding the date of your rating. Try to not let one or two unusual incidents, or the child's behavior on the last day or two, unduly influence your rating, but rather consider the whole four-week period.

6. The numbering of the scale points do not represent value judgments. One or nine are not necessarily "good" or "bad" positions. What we would normally consider as average for the age group is not necessarily at 5, the midpoint of the scale, although sometimes it is. E.g., in Scale 12, point 5 is not the average, whereas in Scale 13 it is. If we talk of average, we always mean the normally expected, average amount or frequency for the child's chronological age group.

7. As we are interested in individual differences, please do not try to keep a child near to what you consider the average. The wider the individual differences we get, the better it is for research purposes.

8. It is also imperative that you should not hesitate to rate a child in an "uncomplimentary" way. The importance of obtaining as objective a rating as humanly possible is very obvious. These ratings will not be used for or against anybody, and the only way we can hope for a true representation, in the ratings, of the existing individual differences is if you can persuade yourself to give us your own, true opinions.

9. When you rate a child on one particular scale, try to base your rating exclusively on the area under consideration. Do not let the child's general personality or your rating of him on other scales color your rating on this particular scale.

10. The masculine pronoun (he) has been used throughout for convenience. It applies whether the child whom you are rating is male or female.

(Rev. 1-67)

11. If you think the area of behavior or characteristic covered by a scale is of great importance for one particular child, or if the child has special problems in that field, please place a star after the scale title.

12. Please be very sure that the scale number and title of the Rating Guide match those of the Teachers' Rating Scales sheet. For your convenience, the beginning of every new page in the Teachers' Rating Scales is indicated in the Rating Guide.

13. Two behavior settings are distinguished on the rating scales. "Teacher's sphere" means that the child is working directly with the teacher either in a group or individually. "Independent work on an assignment" is self-explanatory. You are asked to make separate ratings for these two settings if there appears a square under both of them, otherwise only the one rating is required.

14. Sometimes your ratings will be identical for both settings --- but please try to detect differences in a child's behavior according to the situation he is in.

15. Sometimes you will find the square for your rating halfway between the two settings. In these cases we would like to have your general impression of the child, e.g., Scale 1.

16. On each scale, underneath the small squares, space is provided for remarks and anecdotal behavior examples of the kind you usually write down for each child from time to time. If you have more to say than can be fitted in, please continue on the back of the page, marking the relevant scale number. Please give us as much material as you can.

17. Please rate each child on every scale.

18. Any remarks and comments on the rating scales will be welcome and helpful in improving these scales.

Question Number	DESCRIPTION OF SCALES
	(Beginning of Page 1 of Rating Scales)
1.	ENERGY LEVEL 1. Child is vigorous and energetic most of the time. Is full of vim and pep. 3. 5. Child sometimes displays great energy, (e.g., in stimulating situations) but quite often is lacking in vim and vigor. 7. 9. Child is difficult to stir to energetic activities. Most of the time he is lacking in vim and vigor.
2.	MOOD 1. Child is more often cheerful and happy than depressed and gloomy. 3. 5. Child is sometimes cheerful and happy, and sometimes depressed and gloomy. 7. 9. Child is more often depressed and gloomy than cheerful and happy.
3.	SATISFACTION IN ACADEMIC ACHIEVEMENT 1. Child often shows pleasure at his academic achievements. 3. 5. Child sometimes shows pleasure at his academic achievements. 7. 9. Child never shows pleasure at his academic achievements. It does not seem to make any difference to him whether he is achieving a lot or very little.
4.	OBEDIENCE 1. Child always obeys commands, requests, suggestions by teacher and other adults in authority. 3. 5. Child usually obeys requests but occasionally disobeys them. 7. 9. Child habitually resists suggestions by teacher and other adults.
5.	PERFECTIONISM IN SCHOOL WORK 1. Child wants to have all his work turn out perfectly. He is seldom satisfied with the work he has done, e.g., often rewrites pages; if he made a mistake in reading one word he insists on repeating the whole sentence, may destroy his paintings because he is dissatisfied with them, etc. 3. 5. Child sometimes makes spontaneous attempts to improve his work but these efforts are not very great or persistent. 7. 9. Child is satisfied with doing the sloppiest work in school subjects. Usually takes the line of least effort.

Question Number	
6.	CONCENTRATION (Attention-Span) 1. Child can usually concentrate on his task well and for long periods of time. 3. 5. Child is able to stay with his work for a limited time. 7. 9. Child shifts his attention from his work excessively frequently. Is continually stopping his main activity in order to gaze about, look at somebody else, etc.
7.	ASPIRATION LEVEL 1. Child is usually willing to try things that are hard to do. He usually strives to attain more and more. 3. 5. Child is sometimes willing to try to do hard things but often prefers easy tasks. 7. 9. Child characteristically undertakes only what is easy. He never seems to strive for more than he can easily manage.
8.	HYPERACTIVITY 1. Child can sit quietly for long periods. Does not squirm or fidget much. 3. 5. Child tends to fidget somewhat, but his restlessness is not very marked. 7. 9. Child cannot sit still, tends to fidget about a great deal, is exceptionally restless.
9.	(Beginning of Page 2 of Rating Scales) CURIOSITY: ASKING QUESTIONS 1. Child is keenly curious and inquisitive. Asks many questions (for information, not simply for attention). Usually insists on more than a superficial answer to his questions. 3. 5. Child often tries to get information about new or strange things, but does not pursue his questioning very far. 7. 9. Child conspicuously fails to ask questions, even about new or strange things.
10.	CURIOSITY: EXPLORING FOR HIMSELF 1. Child shows a very high degree of curiosity by exploring, investigating, trying out things. He always wants to know how things work, what is inside, what it smells like, etc. 3. 5. Child shows tendencies to explore for himself, but does not pursue this very far. 7. 9. Child never tries to explore, investigate, or try out things for himself. Shows no curiosity in these respects.

Question Number	
11.	JERKINESS OF MOVEMENTS 1. Child's movements are very smooth and harmonious. 3. 5. Movements are not as smooth and well-controlled as could be expected at his age, but they are not excessively jerky. 7. 9. Child's movements are often jerky, sudden, abrupt.
12.	TRUTHFULNESS 1. Child has very seldom (or never) been found lying. 3. 5. Child has occasionally been found lying. 7. 9. Child has often been found lying. (Please circle rating if lies are serious in nature.)
13.	QUARRELSOMENESS 1. Child very seldom gets involved in disputes, quarrels, or fights with other children. 3. 5. Child quarrels and fights with other children about as much as is expected at his age. 7. 9. Child's contact with others very often results in argument, quarreling, fighting, etc., (regardless of who started it).
14.	EFFECT OF PRAISE BY TEACHER 1. Praise usually stimulates child to greater efforts. 3. Praise sometimes stimulates child to greater efforts, sometimes not, but is not likely to make him decrease his efforts. 5. Praise sometimes stimulates child to greater efforts but sometimes makes him relax his efforts. 7. Praise sometimes makes child relax his efforts, sometimes not, but is not likely to stimulate him to greater efforts. 9. Praise usually makes child relax his efforts. Apparently he only works hard until he gets the praise.
15.	EFFECT OF CRITICISM BY TEACHER 1. Criticism of quality or quantity of work done by the child usually stimulates him to greater efforts. 3. Criticism sometimes stimulates child to greater efforts, sometimes not, but is not likely to make him decrease his efforts. 5. Criticism sometimes stimulates child to greater efforts but sometimes makes him decrease his efforts. 7. Criticism sometimes makes child decrease his efforts, sometimes not, but is not likely to stimulate him to greater efforts. 9. Criticism usually makes child decrease his efforts, to "give up".
16.	DAYDREAMING 1. Child is never seen daydreaming. 3. 5. Child indulges in some daydreaming but this does not present a problem. 7. 9. Child indulges in excessive daydreaming.

Question Number

17.

ANGER

1. Child gets angry only very rarely.
3.
5. Child gets angry once in a while, about as often as most other children his age.
7.
9. Child gets angry very often. Is readily angered by difficulty, failure, disappointment, denial of his wishes, violation of his rights, disciplinary measures, teasing, aggression on part of other children, etc.

18.

SELF-CONFIDENCE

1. Child usually shows great self-confidence. E.g., he volunteers to take on some responsibility, trusts his own judgments, is willing to express his opinions, etc.
3.
5. Child shows some self-confidence.
7.
9. Child shows very little self-confidence. His behavior is usually hesitant. He tries to see first how others do something before he does it, he is reluctant to express opinions, etc.

Please rate on the basis of apparent (overt) self-confidence regardless of what may lie behind the surface.

19.

INTEREST IN SCHOOLWORK

1. Child is very eager to learn, is easily stimulated by schoolwork.
3.
5. Child is interested sometimes, but not so much other times.
7.
9. Child shows no interest in schoolwork at all.

20.

ORIGINALITY

1. Child shows great originality, e.g., uses play equipment in novel ways, tries out new methods in painting, invents new games, etc. Does not copy others.
3.
5. Child sometimes copies others, but sometimes produces rather original ideas.
7.
9. Child shows no originality at all. Follows the conventional ways or copies others.

(Beginning of Page 3 of Rating Scales.)

21.

INTERNALIZED STANDARDS

1. Child often shows signs of having internalized standards of behavior, e.g., waits for his turn, recognizes others' rights, does not take advantage of weaker children, owns up to some mischief he has done, seems to feel badly after hitting somebody, etc.
3.
5. Child shows some of these signs sometimes, but not very often.
7.
9. Child shows no signs at all of any internalized standards of behavior.

Question Number	
22.	SULKING 1. Child practically never sulks. 3. 5. Child sulks infrequently, or for very short times. 7. 9. Child sulks frequently or prolongedly.
23.	DEPENDABILITY IN WORK 1. Child can be depended on to do his assigned work without much prompting from the teacher. 3. 5. Child sometimes does his assigned work without much prompting but sometimes would not settle down to work. 7. 9. Child cannot be depended on at all to do his assigned work without constant supervision.
24.	ANXIETY ABOUT FAILURE IN ACADEMIC PROGRESS 1. Child is very anxious about slow rate or failure in academic progress. Is worried, for example, if somebody else advances to the next reader but not him. 3. 5. Occasionally shows some normal anxiety. 7. 9. Child shows no anxiety whatever about slow rate or failure in academic progress. Could not care less.
25.	STEALING 1. Child has never been observed or found out stealing. 3. 5. Child has once or twice been observed or found out stealing. 7. 9. Child has a number of times been observed or found out stealing.
26.	ABILITY TO INTERRUPT AN ACTIVITY IF NECESSARY 1. Child is easily able to interrupt even a much favored activity if there is a necessity for it. 3. 5. Child sometimes finds it difficult to interrupt some activities. 7. 9. Child finds it extremely difficult to interrupt an activity, even if it is one he does not really like.
27.	ABILITY TO ACCEPT HELP IN ACADEMIC WORK 1. Child is always able and willing to accept help in his academic work. 3. 5. Child sometimes refuses to accept help. 7. 9. Child habitually refuses to accept help.

Question Number

28. BLAMING OTHERS

1. Child very rarely blames others for his own difficulties or failures.
3.
5. Child occasionally blames others.
7.
9. Child customarily blames others for all his difficulties and failures.

29. PERSISTENCE

1. Child tends to persist steadfastly with a task, despite great difficulty or failure. Does not lose heart easily at all.
3.
5. Child usually persists for a while but if the difficulty is not overcome fairly promptly, he quits.
7.
9. Child loses heart and quits too readily. Shows no persistence at all.

30. NERVOUS HABITS

1. Child is free from all signs of nervous habits, such as thumb sucking, nail biting, hair curling or twisting, clutching hands, biting lips, etc.
3.
5. Child shows one or two nervous habits but only to a mild degree.
7.
9. Child shows numerous habits - or - marked addiction to one.

31. NEATNESS

1. Child is usually very neat in his personal appearance, in keeping his desk, etc.
3.
5. Child is usually tolerably neat.
7.
9. Child is usually rather slovenly in his personal appearance, in keeping his desk, etc.

32. ATTENTION SEEKING DEVICES

Please consider so-called "negative" attention-seeking devices like the following:

needless requests or questions, silly verbal behavior, clowning, showing off, shouting, testing limits, tattling, crying, tantrums, hiding, playing sick, or other. (Apart from your rating, please mention what kind of attention-seeking devices this child employs.)

1. Child never seeks teacher's attention through devices similar to the ones described above.
3.
5. Child occasionally employs such devices.
7.
9. Child quite frequently resorts to such devices.

Question Number

(Beginning of Page 4 of Rating Scales)

33. IMPULSE CONTROL

1. Child has usually good control of his impulses. Very seldom acts impulsively.
3.
5. Child has some control of his impulses, but sometimes acts rather impulsively.
7.
9. Child is extremely impulsive. He very seldom stops to think about the consequences of his actions.

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34. RESISTANCE TO BOSSING BY OTHER CHILDREN

1. Child usually strongly resists other children's attempts to boss and dominate him.
3.
5. Child sometimes makes attempts to resist bossing by other children but sometimes does not.
7.
9. Child usually does not make any attempt to resist bossing by other children.

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35. FREE EXPRESSION OF EMOTIONS

1. Child expresses his emotions freely. Rarely attempts to conceal them.
3.
5. Child sometimes attempts to conceal his emotions.
7.
9. Child always attempts to conceal his emotions.

Please indicate: what kinds of emotions do you have in mind?

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36. BEHAVIOR IN NEW SITUATIONS

1. Child is flexible and adaptable when he meets new situations.
3.
5. Child is sometimes flexible when he meets new situations, but sometimes he is not.
7.
9. Child adapts to new situations only with great difficulty if at all. He usually shows very little flexibility. May try to avoid new situations.

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37. INITIATING AGGRESSIVE BEHAVIOR WITH PEERS

1. Child never, or almost never, initiates aggressive behavior against other children. Examples of aggressive behavior: hitting, pushing, threatening, teasing, bullying, etc.
3.
5. Child might do above things sometimes, especially if provoked.
7.
9. Child initiates a lot of aggressive behavior against other children.

Question Number	
38.	JOINING AGGRESSIVE ACTIVITIES 1. Child never or almost never joins ongoing aggressive activities like hitting, pushing, threatening, teasing, bullying, etc. 3. 5. Child might join such activities at times but not regularly. 7. 9. Child almost invariably joins ongoing aggressive activities.
39.	EMOTIONAL RESPONSE TO FRUSTRATION 1. If child is frustrated in trying to accomplish some task, he usually is able to do something about it in an unemotional way: tries to overcome the obstacle, seeks help, leaves the situation, etc. 3. 5. Child sometimes reacts to frustration unemotionally but sometimes displays strong emotions. 7. 9. Child usually reacts to frustration in a highly emotional way: might cry or kick, leave the situation sobbing, etc.
40.	POPULARITY 1. Child is popular with most classmates. 3. Child is popular with a greater number of his classmates than the number with whom he is unpopular. 5. 7. Child is unpopular with a greater number of his classmates than the number with whom he is popular. 9. Child is unpopular with most classmates.
41.	PATIENCE 1. Even if child wants to do something badly, he can usually bring himself to wait patiently. E.g., if he is thirsty, he can wait for a drink, or if he wants to use some material or read a book that is tied up, he can do something else in the meantime and then go back to it, etc. 3. 5. About average patience. Child can wait for short periods but gets restless if he has to wait for long. 7. 9. Child is exceptionally impatient. Whatever he wants to have or to do, he wants it immediately.
42.	SEEKING TEACHER'S APPROVAL 1. Child does actively solicit teacher's approval in appropriate ways through acceptable behavior. 3. 5. If child does not get a lot of approval from teacher spontaneously, he actively solicits it. 7. 9. Teacher's approval is all-important for child. He can't have enough of it. Even if he gets a lot, he still solicits more.

43.

SHYNESS

1. Child practically never shows signs of shyness or embarrassment in social situations. Is usually self-composed.
3.
5. Child may be shy at first contact with adults or children, but this usually wears off quickly.
7.
9. Child is persistently very shy in social situations. Is very easily embarrassed. Seems afraid of social contacts with adults and children. May try to avoid such contacts.

44.

BEHAVIOR AFTER AN EMOTIONAL UPSET (e.g., strong conflict with teacher or with another child)

1. After an emotional upset the child shows no noticeable after-effects such as unusual silence, inactivity, brooding, pouting, irritability, showing off, etc.
3.
5. Child shows some of these but only to a mild degree.
7.
9. An emotional upset usually brings an aftermath of disturbed behavior, such as mentioned above.

Please note if this child never has emotional upsets.

(Beginning of Page 5 of Rating Scales)

45.

DESIRE FOR POSSESSIONS

1. Child has never been found gathering papers, pencils, food, etc., that he does not need currently.
3.
5. Child sometimes gathers things he does not actually need, but does this only occasionally.
7.
9. Child persistently gathers more of everything than he can use within a reasonable time. Seems to enjoy the thought of possessing things even if he has no current use for them.

46.

INTENSITY OF OVERT ANGER

1. Child practically never overtly displays anger. He either does not become angry or suppresses overt signs of his anger.
3. When child is angered, he usually only shows mild temper, not violent.
5. When angered, child is equally likely to show mild or violet temper.
7. When angered, child is more likely to show violent than mild temper.
9. When angered, the child's display of anger is almost always violent, like throwing, hitting, kicking things, crying violently, becoming violently negativistic, etc.

47.

REACTION TO ACCIDENTS OR HURTS

1. Child seems entirely indifferent to bodily hurts. Is callous to pain.
3.
5. Child usually ignores small hurts or laughs about them; he must be seriously hurt before he will whimper or cry.
7.
9. Child is most upset about any bodily hurt. Cries or whines with great complaint, even in response to small accidents or hurts.

Question Number	
48.	COMMUNICATION WITH PEERS 1. Child talks to other children freely and spontaneously. 3. 5. Talks fairly freely to his friends but considerably less to others. 7. 9. Child is not inclined to speak to other children unless spoken to and even then would hold back sometimes.
49.	FEAR OF PHYSICAL DANGER 1. Child takes reasonable caution in face of physical danger, without being over-cautious. 3. 5. Child is fearful in some situations, i.e., playground activities, contact sports. 7. 9. Child is over-cautious about physical danger. Would not take the slightest chances.
50.	SHARING 1. Child is very easily able to share his work materials and toys with other children. This presents no problem at all to him. 3. 5. Child is usually able to share, perhaps after initial hesitancy. On rare occasions he may refuse to share. 7. 9. Child absolutely refuses to share any of his real or imaginary possessions with other children.
51.	EMOTIONAL REACTION TO CRITICISM 1. Child tends to ignore criticism toward him. Either would not act upon adverse comments or would appear not to have heard or understood critical remarks. 3. 5. Child tends to take notice of criticism (e.g., by changing his behavior) but does not get upset or mad about it. 7. 9. Child is extremely sensitive to criticism, e.g., gets mad or tearful if criticized.
52.	INTEREST IN SEX 1. Child shows no signs of any strong interest in sex at all, e.g., pays no attention when others make sex-related remarks. 3. 5. Child might enjoy listening to sex-related remarks, occasionally might even join in giggling or joking about sex, but on the whole he is not very concerned with these things. 7. 9. Child shows strong interest in sex and related things (e.g., femininity) by making remarks, giggling, joking, teasing about it.

Question Number	
53.	FRIENDLY APPROACH TOWARD OTHER CHILDREN 1. Child generally shows open friendliness toward other children. Is quick to make clearly friendly approaches. 3. 5. Child makes some friendly approaches to others but just as often waits for the other child to make the approach. 7. 9. Child never makes any friendly approach to other children.
54.	RESPONSE TO FRIENDLY APPROACH FROM OTHER CHILDREN 1. Child is quick to respond positively to even the slightest friendly approach by another child. 3. 5. Child usually responds to clearly friendly approaches by other children. 7. 9. Child almost never responds to, or actively rejects, even the friendliest approach by other children.
55.	DISTRACTING OTHERS 1. Child does not usually try to distract others from their work. 3. 5. Child sometimes tries to distract others from their work. 7. 9. Child habitually tries to distract others from their work.

TEACHERS' RATING SCALES

Child's Name: ____________________ Date of Rating: ____________________

Period to be covered: The last 4 weeks just before the rating date. Rater's Name: ____________________

Please consult INSTRUCTIONS of the RATING GUIDE thoroughly before rating.

Scale Number and Name	Teacher's Sphere	Independent work on an assignment
1. ENERGY LEVEL	☐	
2. MOOD	☐	
3. SATISFACTION IN ACADEMIC ACHIEVEMENT	☐	
4. OBEDIENCE	teacher → ☐	☐ ← other adults
5. PERFECTIONISM IN SCHOOL WORK	☐	☐
6. CONCENTRATION (Attention-span)	☐	☐
7. ASPIRATION LEVEL	in academic work → ☐	☐ ← in other activities
8. HYPERACTIVITY	☐	☐

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Scale number and name	Teacher's sphere	Independent work on an assignment
9. CURIOSITY: ASKING QUESTIONS	⊔	
10. CURIOSITY: EXPLORING FOR HIMSELF		⊔
11. JERKINESS OF MOVEMENTS	⊔	
12. TRUTHFULNESS	⊔	
13. QUARRELSOMENESS	⊔	
14. EFFECT OF PRAISE BY TEACHER	⊔	
15. EFFECT OF CRITICISM BY TEACHER	⊔	
16. DAYDREAMING	⊔	⊔
17. ANGER	⊔	⊔
18. SELF-CONFIDENCE	⊔	
19. INTEREST IN SCHOOLWORK	⊔	⊔
20. ORIGINALITY	⊔	

Scale number and name	Teacher's sphere	Independent work on an assignment
21. INTERNALIZED STANDARDS	☐	
22. SULKING	☐	
23. DEPENDABILITY IN WORK		☐
24. ANXIETY ABOUT FAILURE IN ACADEMIC PROGRESS	☐	
25. STEALING	☐	
26. ABILITY TO INTERRUPT AN ACTIVITY IF NECESSARY	☐	☐
27. ABILITY TO ACCEPT HELP IN ACADEMIC WORK	from teacher → ☐☐	← from children
28. BLAMING OTHERS	☐	
29. PERSISTENCE	in academic work → ☐☐	← in other activities
30. NERVOUS HABITS	☐	
31. NEATNESS	☐	
32. ATTENTION-SEEKING DEVICES	☐	☐

Scale number and name	Teacher's sphere		Independent work on an assignment
33. IMPULSE CONTROL	☐		☐
34. RESISTANCE TO BOSSING BY OTHER CHILDREN		☐	
35. FREE EXPRESSION OF EMOTIONS		☐	
36. BEHAVIOR IN NEW SITUATIONS	☐		☐
37. INITIATING AGGRESSIVE BEHAVIOR WITH PEERS	☐	☐ outside classroom	☐
38. JOINING AGGRESSIVE ACTIVITIES	☐	☐ outside classroom	☐
39. EMOTIONAL RESPONSE TO FRUSTRATION	☐		☐
40. POPULARITY		☐	
41. PATIENCE	☐		☐
42. SEEKING TEACHER'S APPROVAL	☐		☐
43. SHYNESS		☐	
44. BEHAVIOR AFTER AN EMOTIONAL UPSET	while disciplined> ——>	☐☐	<——< after being disciplined

Scale number and name	Teacher's sphere	Independent work on an assignment
45. DESIRE FOR POSSESSIONS	☐	
46. INTENSITY OF OVERT ANGER	☐	
47. REACTION TO ACCIDENTS OR HURTS	☐	
48. COMMUNICATION WITH PEERS	☐	
49. FEAR OF PHYSICAL DANGER	☐	
50. SHARING	☐	
51. EMOTIONAL REACTION TO CRITICISM	from teacher >——> ☐	☐ <——< from children
52. INTEREST IN SEX	☐	
53. FRIENDLY APPROACH TOWARD OTHER CHILDREN	☐	
54. RESPONSE TO FRIENDLY APPROACH FROM OTHER CHILDREN	☐	
55. DISTRACTING OTHERS	☐	☐
56. What would you say is the main behavior problem of this child?		

OUTLINE FOR V.T. INTERVIEW
WITH PARENTS AT TIME OF ADMISSION

Every experimental and control child should be covered:

Attitudes toward School and Relationship with other Children:

1. How does the child like school? (Child's expression of like, dislike; his attitudes when he talks about school; resistance to going to school.)

2. Child's attitudes toward school achievement. How important are they? Does he bring some of his work home? Attitude toward homework.

3. Does child tell parents about classmates he likes? How many?

4. Does child play with other children--classmates and neighborhood children? How frequently per week?

Behavior at Home:

5. Activity level (Active or quiet).
6. Obedience with father, with mother (Compliance with their wishes, negativism, hostility).
7. Demanding attention.
8. Ability to take criticism.
9. Frustration tolerance.
10. Frequency of anger.
11. Intensity of anger.
12. Ability to share experiences with parents and siblings.
13. Consideration for and ability to share with siblings.
14. Affectionateness.
15. Any other unusual behavior observed?
16. Symptoms specific to the child, e.g., wetting, lying, stealing, running away, etc.
17. Frequency of specific symptoms during the last week?
18. Effects of medication, if any is taken.

NAME________________________________

ADJUSTMENT AT HOME

These scales are to be filled out on the basis of the information obtained by the interviewer with the parent. The rater will consider only this material. The items refer to the appraisal of the child's current status, not to a comparison with how he was before.

Each item is to be rated on a four-point scale, where "1" represents a problem-free adjustment, or at least one not significantly different from a normal child. "4" represents the extreme in maladaptive behavior.

EVALUATION SCALES:

1. Attitude toward School (Items #1 and #2)
    1) Likes to go, expresses interest and willingness, brings home materials proudly, comments favorably about the experience. Shows no resistance to school.
    2) Talks resistance but goes regularly.
    3) Plays sick, looks for excuses to miss school.
    4) Generally unfavorable attitude, expresses dissatisfactions openly, or doesn't talk about school, frequently resistant or makes attempts to avoid school. Needs considerable urging to get going.
2. Social Relations at Home and at School (#3, #4)
    1) Plays well with others, has appropriate (age) friends to visit and is visited, no difficulties in play behavior, talks of school friends positively.

EVALUATION SCALES (continued)

2. Social Relations at Home and at School (#3, #4) - continued

   2) Limited number of social contacts, but plays well; or, adequate contacts with rare difficulties in play behavior.

   3) Occasional play with others, occasional upsets or poor play behavior. Plays better with adult supervision. Much older or younger.

   4) Generally unfavorable. Rarely plays with others, or disruptive play habits. Does not mix well. Occasional talk of friends at school, mostly critical.

3. Hyperactivity (#5)

   1) Normally active, plays spontaneously, has adequate energy

   2) Plays hard, energetic

   3) Overactive, restless, quiet for short periods only

   4) Extremely overactive, continually on the go, never sits still

4. Relationship with Mother (#A 6, 7, 8, 12, 14)

   1) Gets along with mother, usually obedient, responds to controls and affection, enjoys

   2) Occasional upsets, generally gets along well

   3) Frequent upsets, often disobedient and difficult to manage. Fluctuating attitudes.

   4) Does not get along with mother. Hostile, negative or uncommunicative and distant.

5. Relationship with Father (#B 6, 7, 8, 12, 14)

   1) Gets along with father, usually obedient, responds to controls and affection, enjoys

   2) Occasional upsets, generally gets along well

EVALUATION SCALES (continued)

5. Relationship with Father (#B 6, 7, 8, 12, 14) - (continued)

   3) Frequent upsets, often disobedient and difficult to manage. Fluctuating attitudes.

   4) Does not get along with father. Hostile, negative or uncommunicative and distant.

6. Emotional Reaction to Frustration (#9, 10, 11)

   1) Reacts to frustration of needs with average upsetness, with recovery and persistence

   2) Usually handles frustration well, some minor upsets

   3) Frequent outbursts when denied, or frustrated, poor recovery

   4) Abnormal frustration threshold, becomes easily and very frequently upset with little external restraint or control or modification

7. Sibling Relations (#12, 13)

   1) Gets along well with siblings, no excessive fighting, or jealousy

   2) Usually gets along, some play

   3) Frequent hostility, many upsets, little relationship

   4) Does not get along, share, communicate, etc., with siblings, continuous biting, jealousy, etc.

8. Destructiveness

   1) Not destructive, plays with toys and handles materials carefully

   2) Usually careful, not unusually destructive or rough with objects of his own or others

   3) Frequently destructive, bangs things around

   4) Extremely rough in handling materials, destroys things readily

EVALUATION SCALES (continued)

9. Dependency

1) Adequately independent for age. Usually tries to handle things such as self-care, school, play
2) Occasionally needing help, but generally independent
3) Frequently needs help with things, looks to others to do things for him, gives up somewhat quickly
4) Clinging, dependent, unable to do things on his own; very quick to give up

10. Sleep Disturbance

1) Goes to bed and to sleep easily, and usually sleeps through; arises at regular time with little difficulty
2) Usually no problems about falling asleep, remaining asleep, or getting up
3) Occasional nightmares/difficulty falling asleep/arises early
4) Much difficulty falling asleep, frequently in and out till late/ frequent nightmares or terrors/ arises very early

11. Anti-Social Behavior

1) Socially conforming, no lying, stealing, or belligerence to others
2) Usually conforming: occasional fighting, or defensive lying; no persistence difficulty
3) Occasional belligerence, some lying - occasional stealing, or running away
4) Constantly lying, stealing, belligerent to others

EVALUATION SCALES (continued)

12. Medication: (Type:________________________Dosage:______________________)

0) No medication

1) Good response; definite changes are seen in activity, attention span, etc.

2) Some improvement

3) Continued difficulties, not quite as bad as before

4) No change with medication

ROSEVILLE PROJECT

SOCIAL ADJUSTMENT AT HOME

NAME____DATE________________________

____________________ 1. Attitude toward school

____________________ 2. Social relations at home and at school

____________________ 3. Hyperactivity

____________________ 4. Relationship with mother

____________________ 5. Relationship with father

____________________ 6. Emotional reaction to frustration

____________________ 7. Sibling relations

____________________ 8. Destructiveness

____________________ 9. Dependency

____________________ 10. Sleep disturbance

____________________ 11. Anti-social behavior

____________________ 12. Medication

Type:____________________Dosage:____________________